University of Zurich[UZH]

Emphasis Framing Effects in Political Communication

An Experimental Approach to the Role of Issue-Specific Argument Strength, Cross-Thematic Salience Emphasis Frames, and Political Value Preferences in Citizens' Attitude Formation

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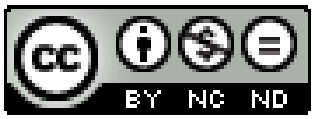

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ABSTRACT

The investigation of emphasis framing effects is one of the most often analyzed types of communication influences on citizens' attitudes in political communication research. A large volume of empirical studies suggests that simple changes in the emphasis on a specific aspect of an issue or event can produce significantly different issue attitudes. This has fostered discussions on citizens' susceptibility to irrational attitude formation under one-sided framing conditions.

However, the empirical paradigm from which to research emphasis framing effects has received important criticism in the last years. Much of this criticism argues that the investigated frames are often confounded by varying thematic information. This implies that susceptibility to framing effects is overstated in the literature and may originate from differing issue-specific information, not from the frame emphases themselves. If this critique would be empirically supported and only varying thematic information is responsible for framing effects, the effects reported in the literature would imply that attitudinal shifts are not irrational, but the result of rationally learning from different thematic information. Moreover, the theoretical contribution of the emphasis framing approach would be seriously questioned and could be nothing more than the longstanding concept of persuasion based on the provision of new thematic information.

To test whether emphasis frames exert unique effects on citizens' issue attitudes, this study introduces the concept of salience emphasis frames as a type of framing that is not confounded through the provision of additional issue-specific information, but uses well-known and cross-thematic patterns of interpretation such as political values to contextualize thematic information. In addition, the study integrates the varying argument strength of thematic information and citizens' political value preferences as two further variables that could condition the framing effect. This enables testing salience emphasis framing effects in differently challenging situations.

The results of a 2x3x2 online experiment with a representative sample (N = 833) show that issue-specific argument strength affects issue attitudes but one-sided salience emphasis frames also demonstrate clear attitudinal effects, mainly via changing citizens' evaluation of issue-specific argument strength. The framing effect is present regardless of whether the frame contextualizes weak or strong issue-specific arguments for an attitude in accordance with the frame and regardless of whether the frame is value-resonant or non-resonant. Moreover, value-resonant frames suppress the effects of issue-specific argument strength, and citizens follow "their" frame in the same manner regardless of thematic facts.

These results confirm that salience emphasis frames can exert unique attitudinal effects independently from persuasion with new thematic information and thus, underline the relevance of emphasis framing as a distinctive form of communicative influence. Furthermore, the results indicate that one-sided salience emphasis frames endanger citizens' rationality in attitude formation and can lead to unsubstantiated attitudinal shifts, which might distort democratic decision-making.

CONTENTS

TABLES

FIGURES

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Zurich, February 2020 Johannes Kaiser

I INTRODUCTION

1.1 Why did political communication research examine emphasis framing effects in the past?

Citizens' attitudes toward political issues are the foundation of collectively binding decision-making in democratic societies. As famously declared in Article 21 of the Universal Declaration of Human Rights (UDHR), the "will of the people shall be the basis of the authority of government" (United Nations, 1948), as long as this will does not endanger the protection of other human rights (see Article 30 in the UDHR). In times of permanent campaigning, social media metrics about highly debated issues and issue positions, and polls on citizens' issue attitudes, the legitimacy of governmental decisions not only relies on the results of elections or referenda but also on whether the government includes the will of the people when deciding on specific policies and issues during the term of office (Lilleker, 2006).

However, citizens' issue attitudes do not simply exist from the outset. These attitudes not only result from personal factors such as citizens' deeply rooted political core values (Schwartz, Caprara, & Vecchione, 2010), past experiences (Liu & Hilton, 2005), and education (Schoon, Cheng, Gale, Batty, & Deary, 2010). They also evolve in communicative processes (Entman, 1989). Citizens expose themselves to political information to form attitudes toward current political issues, and political actors try to influence this attitude formation via communicating to and with citizens to gain public support for their goals to finally increase the legitimacy of their proposed or enacted political decisions.

Since communication research began in the 1940s, scholars have been interested in the question of how communication, especially media communication, affects citizens' attitudes toward political issues (Neuman & Guggenheim, 2011). Various types of communication have been analyzed in the last decades to better understand how effectively they influence political attitudes. This has sometimes led to contrary conclusions about the influence of communication on citizens' attitudes, which range from minimal to conditional to strong effect. However, one type of communication has provided "evidence of significant media effects" (Neuman & Guggenheim, 2011, p. 178), and thus received more attention in academia and beyond in the last 20 years than most other types of communicative influences, namely the effects of emphasis frames on citizens' issue attitudes (D. A. Scheufele & Iyengar, 2017).

The central idea of emphasis framing is that issues can be presented from various perspectives (Chong & Druckman, 2007b). Depending on which of these perspectives is highlighted (Entman, 1993), citizens tend to follow the more salient issue perspective when interpreting the issue (Matthes & Schemer, 2012). These perspectives, or frames, "make sense of relevant issues" (Gamson & Modigliani, 1989, p. 3) by diagnosing, evaluating, and

prescribing issues or events with common interpretative patterns deeply rooted in societies (Entman, 1993) such as freedom, security, or environmentalism. Moreover, the salient issue perspective – i.e., the applied frame – often contains a specific valence, i.e., a positive or negative stance toward the issue, which can lead to an issue attitude aligned with the valence of the highlighted perspective (de Vreese, Boomgaarden, & Semetko, 2011). That is, emphasis on a specific aspect of an issue defines for citizens "how events should be understood" (Berinsky & Kinder, 2006, p. 641), and this understanding often guides their issue attitudes.

For instance, a communicator can discuss the issue of genetically modified plants by emphasizing that modified and thus more resistant crop plants are important in supplying food for the poverty-stricken parts of the population in countries with difficult climatic conditions. This humanitarian frame evaluates genetically modified plants as an opportunity to help overcome hunger and diseases caused by nutrition deficiencies, thus suggesting supporting the approval of these plants. However, a political actor can also apply an economic-liberalism frame to the same issue, highlighting that the increased harvest yield brought about by the modified plants secures farmers' profit, enabling them to reduce the prices for food, and thus benefitting consumers. In addition, one can apply an environmental frame to the issue, emphasizing the danger of reduced biodiversity owing to genetically modified plants and the unforeseeable consequences of irreversible human interventions in nature. This frame evaluates the issue in the opposite direction and rather suggests opposing the approval of genetically modified plants. In contrast, a nationalist frame for the same issue would rather lead to supporting the approval by making more salient that not allowing these plants in the country hinders research on the technology of the future and causes the exodus of expert knowledge and high-tech jobs to other countries that do allow genetically modified plants.

As these examples illustrate, framing an issue by emphasizing a subset of considerations is easy for communicators and does not require more than selecting a convincing aspect of an issue and making this more salient than other perspectives (Entman, 1993). Therefore, emphasis framing is considered a communicative tool with minimal costs (Jacoby, 2000) that political actors often employ to influence public opinion (Hänggli & Kriesi, 2010, 2012; Z. Pan & Kosicki, 2001). In democratic societies, political actors are in constant competition regarding the interpretation of issues to legitimize their goals. Framing allows them to reduce the complexity of these issues to easily understandable considerations with an evaluative component. Through strategic frame choices (Hänggli & Kriesi, 2012), political actors try to influence the process of public frame-building (D. A. Scheufele, 1999; Sheafer & Gabay, 2009) to position their frame as the dominant interpretative pattern for specific issues in classic mass media coverage and in the newsfeeds of social media users.

A large volume of empirical studies has revealed that the political actor who wins the framing contest and presents its frame to citizens has good opportunities to influence not only citizens' issue thoughts (de Vreese, 2004; Shen, 2004b) but also their issue attitudes

(Chong & Druckman, 2007a) and decision-making (Shah, Domke, & Wackman, 1996). This is especially the case in one-sided situations in which citizens are only exposed to one frame for an issue (Beattie & Milojevich, 2017) and when the frame highlights applicable considerations (Chong & Druckman, 2007c) related to well-known and culturally shared political values (Beattie & Milojevich, 2017; Entman, 1993). This is termed *value framing* (e.g., Shen & Edwards, 2005). The literature notes one-sided emphasis framing effects for many different topics ranging from energy and immigration policies (Druckman, Peterson, & Slothuus, 2013) via social welfare (Slothuus, 2008), climate change (Nisbet, Hart, Myers, & Ellithorpe, 2013), health conditions in prisons (Matthes & Schemer, 2012), emergent technologies (Druckman & Bolsen, 2011), and enlargement of the European Union (de Vreese et al., 2011) to urban growth projects and hate group rallies (Chong & Druckman, 2007a), to name just a few examples.

Given the clear empirical evidence for emphasis framing effects suggested by the literature, scholars began questioning citizens' rationality when forming attitudes under one-sided emphasis framing conditions (cf. Chong & Druckman, 2007b; Druckman, 2001a). When simple and small changes in the presentation of the same issue are sufficient to influence which policies citizens support or oppose, "framing effects suggest that distributions of public preferences are arbitrary, and that political elites can manipulate popular preferences to serve their own interests" (Chong & Druckman, 2007b, p. 120). One-sided emphasis frames can push citizens away from their political values (Beattie & Milojevich, 2017) implying that their issue attitudes under framing conditions do not represent their policy preferences, but result from the issue perspective made salient for them. Given that democratic theory builds on the idea of rational citizens with clear preferences and that the aggregated preferences of all (or more precisely: the majority of) citizens should guide political decisions (Downs, 1957), emphasis frames seem to bias public opinion formation and thus pose a risk to democratic decision-making processes.

However, in the political world outside the laboratory, it does not seem that all citizens act completely irrationally and do not show any stable preferences for specific policies, parties, or politicians (Converse, 2000). How can citizens show empirically rather stable preferences when empirical results suggest the existence of emphasis framing effects and that framing is a tool often applied by political actors? The easy answer to this question is that the literature also shows many moderators of framing effects on the individual and contextual level (for an overview, see e.g., Borah, 2011a; de Vreese & Lecheler, 2012). For example, the effects of emphasis frames tend to be stronger when they match citizens' individual schemas (Shen, 2004a) and their political values (Shen & Edwards, 2005), or when citizens possess a low need to evaluate (Druckman & Nelson, 2003). That is, emphasis framing effects do not work uniformly for all citizens, but often need additional conditions to influence their issue attitudes. Most important is that the simultaneous presentation of two competing frames seems to cancel out framing effects (Hartman & Weber, 2009; Sniderman & Theriault, 2004), limiting the strong influences revealed for one-sided emphasis frames.

As sole exposure to one frame for an issue is a somewhat unrealistic setting, because citizens are often exposed to various frames for an issue, it could be argued that while emphasis framing effects can potentially lead to arbitrary preferences in the electorate, the more realistic setting of frame competition prevents the realization of this potential. However, more recent studies on emphasis framing effects suggested that when one-sided frames compete over time in a setting of being exposed to one frame first and to a counter-frame later in time, these one-sided frames can still be influential and reverse initial framing effects, albeit not for all citizens equally (Chong & Druckman, 2010, 2013; Lecheler & de Vreese, 2013; Matthes & Schemer, 2012).

Essentially, in very realistic settings of sequential news exposure, one-sided emphasis frames can threaten rational attitude formation and lead to an arbitrary oscillation of citizens' issue attitudes between different issue positions, leading to the question whether their attitudes actually express their preferences or are merely the result of biased and unstable attitude formation induced by simple changes in the frame of an issue. Given the importance of citizens' attitudes in the decision-making process in democracies and the results outlining that emphasis frames can influence attitudes, the concept of emphasis framing effects has received ample attention in political communication research in the last 20 years.

Moreover, the emphasis framing approach is more than an approach by which to better understand communicative effects. Perhaps unlike any other approach in communication research, the concept of emphasis framing enables researchers to analytically track the entire process of public communication. This is achieved by integrating formerly separated research areas ranging from the strategic communication of political actors (e.g., Hänggli & Kriesi, 2012) via the role of the news media in sending and transforming the frames used by political actors (e.g., Brüggemann, 2014) to the attitudinal effects of frames in public communication on citizens (e.g., Schemer, Wirth, & Matthes, 2012). This integrative power is a unique strength of the emphasis framing approach (de Vreese, 2012; Matthes, 2012; D. A. Scheufele, 1999), explaining its high relevance in the field of communication research.

Given this brief and straightforward summary of the central results of research on emphasis framing effects, the question on why this book examines these effects again remains. The reason for this re-examination is that the emphasis framing approach has recently received substantial criticism regarding whether most empirical studies on emphasis framing effects actually tested for these effects in accordance with the theory (Cacciatore, Scheufele, & Iyengar, 2016; D. A. Scheufele & Iyengar, 2017) and whether emphasis framing effects exist at all (Leeper & Slothuus, 2017). This is briefly discussed next in **Chapter 1.2**.

1.2 The need to re-examine emphasis framing effects and the key research question of this book

Notwithstanding the evidence for (one-sided) emphasis framing effects generated over the past decades (see **Chapter 1.1**), the empirical paradigm employed to investigate these effects has recently been subject to important criticism. The fundamental argument underlying this criticism is that the frames investigated in previous research are often confounded with varying thematic information (Cacciatore et al., 2016; Leeper & Slothuus, 2017; D. A. Scheufele & Iyengar, 2017). Leeper and Slothuus (2017) analyzed more than 100 studies that investigated emphasis framing effects, concluding that nearly all studies worked with confounded stimuli in which the emphasis on a specific frame co-varied with the presentation of different issue-specific information.

For instance, when the topic of a new surveillance law was framed by emphasizing the importance of interpreting the new law in terms of its consequences for civil rights, the stimulus contained the additional thematic information that the law would allow that every citizen could be surveilled without being under reasonable suspicion. However, this thematic fact is missing in the other stimulus that employs a safety frame and emphasizes the importance of interpreting the law based on its consequences for national security. Instead, this stimulus contains very different information on the topic such as the amount of criminal acts the new law will prevent.

According to Leeper and Slothuus (2017), this confounding has three potential consequences for the emphasis framing effects approach. First, it is a mismatch with the theory of emphasis framing effects, because the theory defines information-based persuasion effects as the result of providing new thematic information. In contrast, framing only emphasizes how this information should be weighted (Kinder, 2003; Nelson, Oxley, & Clawson, 1997). Hence, confounding these two aspects dilutes the concept of emphasis framing and makes it indistinguishable from other means of persuasion such as that based on the provision of new information, which threatens the theoretical survivability of the framing approach as a unique concept (see also Cacciatore et al., 2016; D. A. Scheufele & Iyengar, 2017). Second, the confounding in previous studies means it is unclear whether the framing effects reported in the extant literature are actually the result of the emphasis on a specific frame or not simply originate from the differing issue-specific information. Thus, emphasis framing effects could be overstated in the literature and might not exist in non-confounded situations. Third, the confounding has implications for how to interpret the revealed emphasis framing effects in terms of citizens' rationality in attitude formation. If the reason for these effects is that different thematic information is presented together with different frame emphases, attitudinal differences between citizens exposed to different frames might not be arbitrary, but can be likewise the result of rationally learning from the different thematic information. Thus, the framing effects found could be a much less convincing indicator for arbitrary preferences in the electorate, and employing emphasis

frames in political communication might not threaten democratic decision-making as much as the literature presumes.

This criticism scrutinizes a huge body of empirical studies but one must be cautious in unreservedly following the proposed criticism. This becomes most evident when considering the classic definition of emphasis framing proposed by Entman (1993). He defines, "To frame is to *select* [emphasis added] some aspects of a perceived reality and make them more *salient* [emphasis added] in a communicating text" (p. 52). Given this definition, it seems that the theory of emphasis frames enables constructing frames in different ways. On one hand, it seems possible to construct emphasis frames in the confounded way by selecting issue-specific information and presenting only this subset of thematic information (e.g., a new infrastructure project creates 100 new jobs), while omitting issue-specific information not aligned with the frame (e.g., the project endangers a neighboring nature reserve). On the other, the definition also allows for the construction of emphasis frames in a non-confounded way by increasing the salience of one frame (e.g., it is important to evaluate the project in light of its consequences for the environment), while not omitting the thematic facts regarding the effects of the project on the economy as well as on the environment.

That is, the criticized confounding of frames with different thematic information must not necessarily contrast the definition of emphasis frames. One could even argue that political actors do not simply limit the construction of their frames to solely making a perspective more salient, while avoiding the confounding of their frames by the provision of additional thematic information. Often, they also present additional facts underlining the importance of their chosen frame. Thus, former studies on emphasis framing effects are not uninformative or unnecessary, but provide evidence for the attitudinal effects of a mix between frames and selected thematic information, which can be considered emphasis framing effects.

Nevertheless, it is worthwhile responding to the criticism and re-examining these effects by investigating whether emphasis frames exert attitudinal effects when not confounded through the provision of additional thematic information. This test not only strengthens the theoretical uniqueness of the emphasis framing approach in contrast to persuasion based on providing new information, but it also enables a more precise analysis of citizens' rationality in attitude formation under framing conditions. Therefore, this book introduces the concept of salience emphasis frames as a type of framing that is not confounded with new issue-specific information but that uses well-known and cross-thematic patterns of interpretation such as political values to contextualize thematic information. Accordingly, the superordinate research question addressed in this book is "**How susceptible are citizens to salience emphasis framing effects and how rational is their attitude formation under framing conditions?**"

In addition to examining the attitudinal effects of salience emphasis frames in general, this study also presents a framework that allows testing the stability of such effects when circumstances become increasingly challenging for the existence of these effects. For

this purpose, the study integrates two further variables that could condition the effects of salience emphasis frames: the *varying argument strength of thematic information* the frame contextualizes and citizens' *political value preferences*.

Citizens' preferences for political core values (e.g., civil rights, egalitarianism, or safety) play an important role in attitude formation and generally guide citizens to interpret issues or events under the umbrella of their core beliefs (Ciuk, Lupton, & Thornton, 2017; Feldman, 1988; Jacoby, 2006). In addition, former studies on emphasis framing effects revealed that these preferences also moderate the effects of frames. Specifically, when the frame employs a political value that matches citizens' value structure, i.e., when the frame is value-resonant, framing effects tend to be stronger (A. C. Andrews, Clawson, Gramig, & Raymond, 2017; Schemer et al., 2012; Shen & Edwards, 2005). However, this does not mean that non-resonant frames are completely ineffective. It can also be that emphasis frames influence the attitudes of citizens with non-matching values (Beattie & Milojevich, 2017; Chong & Druckman, 2007a). Thus, this study investigates whether salience emphasis framing effects are conditioned by citizens' political value preferences or also occur in the more challenging situation of non-matching values.

Furthermore, this book clarifies the effectiveness of salience emphasis frames in different informational settings. To this end, it investigates whether framing effects only occur when the substantive thematic information the frame contextualizes has high issue-specific argument strength for an attitude in accordance with the frame or also when argument strength is weak. Moreover, this enables examining whether the frame effect itself alters the attitudinal effect of the thematic information, i.e., of the factual content about an issue. For instance, it allows investigating whether salience emphasis frames suppress the effects of issue-specific argument strength, which would be a strong indicator of biased and irrational attitude formation under framing conditions.

In addition, the separation of thematic information and salience emphasis frames as two independent variables enables a more precise test of the mediation processes underlying framing effects. Thus far, the literature provides equivocal results on which psychological mechanisms are responsible for framing effects (e.g., de Vreese et al., 2011; Druckman & Nelson, 2003; Lecheler & de Vreese, 2012; Lecheler, de Vreese, & Slothuus, 2009; Nelson, 2004; Nelson, Oxley et al., 1997; Nelson & Oxley, 1999; Slothuus, 2008). This could be a consequence of the confounding of these two variables, which confuses the psychological mechanisms of information-based persuasion and framing. Therefore, the last step of this study is to re-examine these mediators in a non-confounded setting, which may clarify the mechanisms behind framing effects. Finally, another mediator is proposed that considers more directly the biased evaluation of thematic information than do the mediators noted in the literature.

The superordinate research question and briefly mentioned sub-questions are answered through an experiment with a representative sample of Swiss citizens (N = 833). The next **Chapter 1.3** provides an overview of the structure of this book.

1.3 Structure of this book

This book is structured in five parts to answer the superordinate research question presented in **Chapter 1.2** before, namely how susceptible are citizens to form their attitudes based on salience emphasis frames not confounded with new thematic information. A classic structure is followed, in which the theoretical argument is first elaborated based on an extensive literature review (see **Part II**). Then, testable hypotheses and research questions are proposed (see **Part III**), followed by a description of the empirical method employed to address them (see **Part IV**). Next, the empirical results are provided (see **Part V**) and conclusions presented with a discussion of the implications derived from the results of the study (see **Part VI**).

Given the equivocal understanding in the literature of what framing is (Entman, 1993), the theory section (**Part II**) starts by clarifying the notion of emphasis frames and emphasis framing effects. To this end, the concept is differentiated from other types of frames and framing effects often analyzed in political communication that should not be mixed with the emphasis framing approach, such as equivalency framing (see **Chapter 2.1**). Following this, seminal studies on one-sided emphasis framing effects on citizens' issue attitudes are described, and the interpretation of their results as indicators of citizens' irrationality in attitude formation under framing conditions discussed (see **Chapter 2.2**). The next **Chapter 2.3** "zooms" into the classic effect of one-sided emphasis frames and introduces the psychological mechanisms (i.e., the mediators) analyzed in the literature to explain the influence of these frames on citizens' issue attitudes. Then, **Chapter 2.4** shows that emphasis framing effects do not work uniformly, but that many moderating variables on the individual and contextual level can either foster or reduce the effectiveness of frames, which suggests that emphasis framing does not always endanger citizens' rationality in attitude formation. Thereafter, the multiple roles of political core values in emphasis framing are delineated (see **Chapter 2.5**). The first role is as citizens' individual preference, which independently influences their issue attitude. The second is as an aspect often used to construct emphasis frames, namely value framing. Third is as a moderator of emphasis framing effects. Next, **Chapter 2.6** presents the results of previous research on emphasis framing effects over time to better understand their persistence on the long run. **Chapter 2.7** provides a provisional conclusion about citizens' susceptibility to emphasis framing effects based on the results presented in the preceding chapters.

Chapter 2.8 then responds to the recently raised criticism on the empirical paradigm used to investigate emphasis framing effects. First, it explains the criticized confounding of frame emphases by the provision of different, new thematic information and the implications thereof for assessing the strength of framing effects and citizens' rationality in attitude formation under framing conditions is explained. Second, the concept of salience emphasis frames as a non-confounded type of frame is introduced. Third, the variables of issue-specific argument strength and citizens' political value preference are integrated to clarify the conditions that can potentially affect the effectiveness of such frames. Last, this

subchapter proposes a refined understanding of the mediators responsible for the effects of salience emphasis frames. Thereafter, **Part III** proposes testable hypotheses and research questions on how salience emphasis frames affect citizens' issue attitudes.

Part IV of the book presents the empirical method employed to address the hypotheses and research questions. Because the methods section is rather extensive, this part begins with a brief overview of its structure (see **Chapter 4.1**) before explaining the experimental approach of the study in **Chapter 4.2**. Next, **Chapter 4.3** provides detailed information on the sample, measurements, and procedure of the experiment, after which the wide range of tests conducted to confirm the experimental validity of the study is described in detail (see **Chapter 4.4**). The methods section ends with a summary in **Chapter 4.5** comparable with classic space-constrained methods sections in scientific journals. As such, only reading this part of the methods section should be sufficient to understand the results.

The next section of the book (see **Part V**) presents the results of the experiment along the single hypotheses and research questions, and offers interpretations of the single results. The section is divided into two parts. First, **Chapter 5.1** provides the results concerned with the direct effects of salience emphasis frames on citizens' issue attitudes. **Chapter 5.2** then displays the results of the mediation analyses to understand the indirect psychological mechanisms underlying the direct effects.

Finally, **Part VI** discusses the results on a more abstract level. **Chapter 6.1** elaborates the implications of the results for assessing the strength of framing effects and citizens' rationality in attitude formation. The potential societal implications of the results are then discussed (see **Chapter 6.2**). **Chapter 6.3** demonstrates the meaning of the results for the general future of researching emphasis framing effects in political communication. Subsequently, **Chapter 6.4** provides some more specific recommendations for future research based on the limitations of this study. Finally, the book ends with concluding remarks on emphasis framing effects in political communication in **Chapter 6.5**.

II REFINING PRIOR RESEARCH ON EMPHASIS FRAMING EFFECTS

2.1 The notion of framing and framing effects in political communication research: Clarifying definitional ambiguity

2.1.1 Emphasis frames and other types of frames in political messages

In the last decades, the concept of framing has received more attention from political communication scholars than most other theoretical ideas in communication science (Busby, Flynn, & Druckman, 2018; D. A. Scheufele & Iyengar, 2017). The concept has stimulated hundreds of theoretical and empirical studies with thematic foci on poverty (S.-H. Kim, Carvalho, & Davis, 2010), financial crises (Quiring & Weber, 2012), military inventions (Edy & Meirick, 2007), and political scandals (Kepplinger, Geiß, & Siebert, 2012), for example. Studies have examined framing at different stages in the communication process such as communicators' (often strategic) decisions on how to frame an issue or event, how news media use frames in their issue coverage, and how citizens employ frames when interpreting issues (for an overview, see de Vreese, 2005; Matthes, 2007b, pp. 33–132). In so doing, framing studies employed various methods such as interviews (e.g., Hänggli & Kriesi, 2010), content analyses (e.g., Kleinnijenhuis, Schultz, & Oegema, 2015), surveys (e.g., Hameleers & Vliegenthart, 2016), experiments (e.g., Igartua & Cheng, 2009), and linkage analyses (e.g., Wettstein, 2012).

This mix of topical foci, units of analysis, and methods illustrates the strong integrative power of the framing approach as a unified framework to analyze the production, exchange, and effects of the meaning of politically relevant issues and events (Matthes, 2012). However, this mix also elucidates a central weakness of the framing approach, namely its definitional ambiguity. Sometimes, very different phenomena are subsumed unfoundedly under the term framing (Matthes, 2009), and too often, the term framing is merely used as an unspecified, higher-level metaphor for more specific aspects of messages (Matthes, 2007b, pp. 316–318). Ultimately, the thoughtless usage of the general term framing threatens the future of the concept, which is why it is important that scholars always label precisely the types of frames they are investigating and definitions thereof (Cacciatore et al., 2016). Hence, this subchapter differentiates the concept of emphasis frames from the related but different types of frames, which while also prevalent in political communication processes, are not in the narrower focus of this study.

Before differentiating the types of frames, the level on which level this differentiation takes place must be clarified. As mentioned, the literature locates frames at various stages in the collective production of meaning and distinguishes mainly between individual frames and media frames (D. A. Scheufele, 1999). Individual frames (or "frames

in thought," see Druckman, 2001a) are present in the minds of political communicators, journalists, and citizens and refer to the organizing principles and schemata individuals employ to understand issues and process information meaningfully (also see Entman, 1993; B. T. Scheufele, 2004). In contrast, media frames (or "frames in communication," see Druckman, 2001a) are located on the level of the message. The term media frame describes the presence of frames in what is communicated. However, the term is somewhat problematic, as it does not explicitly include non-mediated, direct interpersonal communication and often reduces media to journalistic news media (e.g., D. A. Scheufele, 1999). Political communication increasingly takes place on online social platforms through which political actors and citizens can bypass professional news media (Chadwick, 2017) when applying – consciously or unconsciously (Gamson, 1989) – a specific frame to a political issue in their communication (i.e., when framing an issue). Thus, it seems more appropriate to speak broadly of *frames in political messages* to refer to communicated frames, instead of employing the term media frames.

At the level of frames in political messages, the literature provides three popular systematizations:

1) The first noteworthy systematization is the probably most often employed one in communication science and differentiates between *generic frames* and *issue-specific frames* (de Vreese, 2005; de Vreese & Lecheler, 2012; Vliegenthart, 2012). Issue-specific frames are tied to only one issue or event and highlight a specific aspect thereof. Such frames are highly content-related and concerned with the substantive thematic aspects of an issue. For example, Kaiser and Kleinen-von Königslöw (2017) analyzed the news media's issue-specific framing of the Euro crisis in Spanish and German online news outlets between 2010 and 2014. Based on a data-driven, quantitative content analysis, the authors identified four relevant frames for this issue, which were concerned with the different substantive thematic aspects discussed by the Spanish and German news media. The frame "bank crisis" described the Euro crisis as a consequence of the financial market meltdown in the aftermath of the Lehman Brothers Inc. bankruptcy and discussed how the banks responsible for the crisis should financially contribute through increased taxes or shareholders' contributions to stabilize the European currency. In contrast, the "sovereign debt" frame emphasized the crisis as the result of public deficits that were too high. The third frame, "conditional assistance," highlighted the importance of providing monetary help to nations with financial problems, but under the strict condition of deeper European integration and governmental austerity measures. The last frame was that of "competitiveness," which focused on how European nations should increase their economic competitiveness by reforming their labor markets or social security systems to overcome the crisis.

In contrast to issue-specific frames, generic frames "transcend thematic limitations and can be identified in relation to different topics" (de Vreese, 2005, p. 54). These frames focus less on the argumentative content of an issue, such as the pros and cons of different issue positions, and more on the general patterns that particularly news media employ for the presentation and narration of issues. This allows comparing the prevalence of the same frame across issues. For example, Semetko and Valkenburg (2000) identified five generic frames often prevalent in news coverage: The frame "attribution of responsibility" focuses on the search for the culprit(s) of political developments, and the "human interest frame" refers to a general emphasis on the portrayal of feelings and private details rather than on a societal angle. The "conflict frame" highlights disagreement among (political) actors and describes politics in the sense of winners and losers, while the "morality frame" contains prescriptions on what is morally right and wrong. Finally, the "economic frame" focuses on the economic consequences of an issue or event. Other generic frames proposed by scholars include the "strategy frame," sometimes also called the "horse-race frame" (Cappella & Hall Jamieson, 1996), which is comparable with the previously mentioned conflict frame or "episodic frames" (Iyengar, 1991) that focus on the individual rather than societal level, as also does the human interest frame.

2) A second systematization of message frames is offered by Matthes (2007b, pp. 55–62). He refined the systematization mentioned before using not only the criteria of issue-specific versus cross-thematic frames but also the degree to which the frame is concerned with the substantive content of a topic. Specifically, at the higher order level of his systematization, he distinguished between *formal-stylistic frames* and *content-related frames*. Formal-stylistic frames are generic frames, such as the human interest or conflict frame, which have nothing in particular to do with the topic framed but rather describe formal types of story narrations (e.g., from the perspective of an individual or by focusing on the conflict between actors without discussing what the conflict is about). In contrast, content-related frames are concerned with the substantive thematic aspects of an issue or event. However, Matthes (2007b, pp. 55–62) argued that substantive frames must not be only issue-specific, but that content-related frames can also use cross-thematic interpretations to frame the thematic core of an issue or event. Thus, he proposed distinguishing the level of content-related frames as *issue-specific* and *cross-thematic frames*.

   An example of these types of content-related frames is provided in a further study by Kaiser and Kleinen-von Königslöw (2019). They re-analyzed the same substantive frames they found in the aforementioned study on the Euro crisis (Kaiser & Kleinen-von Königslöw, 2017). They checked which frames were exclusively tied to the specific issue of the Euro crisis and which frames mirrored cross-thematic patterns of interpretation related to the substantive thematic arguments on the Euro crisis, but were also applicable to different issues. They found that two of the substantive content-related frames found in the data-driven

procedure were pure issue-specific frames only applicable to the specific topic of the Euro crisis, e.g., the "conditional assistance" frame that emphasized highly specific measures to solve the crisis. However, the other two frames clearly mirrored the superordinate (economic) ideologies of either neoliberalism (i.e., free markets) or Keynesianism (i.e., state intervention), and thus employed cross-thematic but content-related frames. For instance, the "competitiveness" frame employed the well-known neo-liberal perspective and argued for free markets and a less prominent government to solve the crisis. This perspective was not only important for the Euro crisis, but also prevalent in the framing of other issues such as social welfare or educational policy (for more examples of cross-thematic content-related frames, see Hopkins & Mummolo, 2017).

3) The third systematization of frames relevant in the literature is most prominent in political science and differentiates between *equivalency frames* and *emphasis frames* (Borah, 2011a; Druckman, 2001a). This systematization is grounded in the disciplinary roots of framing research, but does not consider the formal-stylistic frames of the (journalistic) presentation and narration of issues developed in the field of communication science. Instead, it integrates the concept of equivalency frames, which originated in psychological (and economic) research (e.g., Kahneman & Tversky, 1984; Levin, Schneider, & Gaeth, 1998), and consider such frames as "different, but logically equivalent, words or phrases" (Druckman, 2001a, p. 228) employed to present an issue. Like formal-stylistic frames in the systematization by Matthes (2007b), equivalency frames are cross-thematic and not directly related to the substantive content of an issue. However, formal-stylistic frames differ materially from each other. For instance, the formal-stylistic frame "conflict" is logically different from the "human interest" frame, and both contain different subsets of thematic information telling people either about the rivalry between political actors that try to win the game for political power (i.e., conflict frame) or about the private lives of political actors (i.e., human interest frame). Unlike formal-stylistic frames, equivalency frames are logically interchangeable and contain identical information. They only vary in how this information is presented. Such frames present the same information as gains or losses (e.g., Druckman, 2001c; Kahneman & Tversky, 1979; Pedersen & Larsen, 2018), also sometimes referred to in the literature as positive or negative framing (e.g., Druckman, 2004; Koch & Peter, 2017; Osmundsen & Petersen, 2019). For example, a new policy for the labor market can be framed by focusing either on the gain that it will help 5% of the unemployed find a new job or on the loss that 95% of the unemployed will not benefit from the new policy.

   In contrast, emphasis frames (Borah, 2011a; Druckman, 2001a) are rooted in sociological research (e.g., Goffman, 1974; Snow & Benford, 1992), and concerned with the substantive aspects of an issue or event. Thus, they are comparable to the concept of content-related frames proposed by Matthes (2007b). Emphasis frames

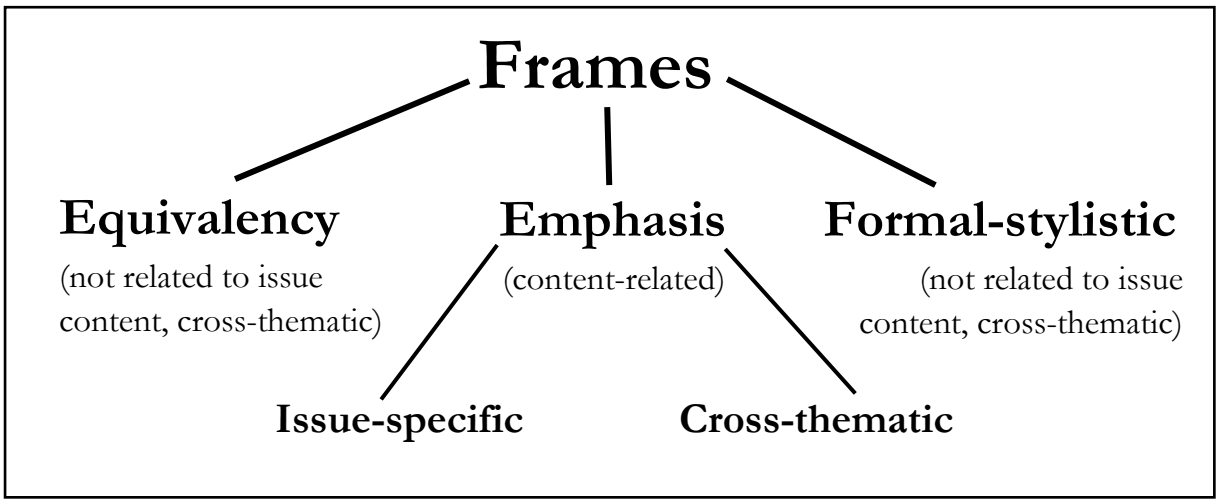
select a specific thematic aspect of an issue such as competitiveness or conditional assistance in the Euro crisis (see again Kaiser & Kleinen-von Königslöw, 2017, 2019), and make this aspect more salient in a political message (Entman, 1993; Gamson & Modigliani, 1989). Therefore, some authors refer to emphasis frames by using also the term "issue frames" (e.g., Jacoby, 2000; Nelson & Kinder, 1996; Slothuus, 2008; Slothuus & de Vreese, 2010). Emphasis frames can be either issue-specific or cross-thematic and unlike equivalency frames, different emphasis frames for an issue are not logically equivalent. For instance, when applying different emphasis frames to the issue of federal assistance to the poor, such as the "humanitarianism" or "government expenditures" frame (Druckman, 2001b), these frames are not logically interchangeable because humanitarianism is not the same as the government's budget. However, equivalency frames such as 5% unemployment versus 95% employment are logically the same (Druckman, 2001a).

Figure 1 proposes a further systematization of frames in political messages that unifies the three systematizations described above and thus, should cover all three superordinate types of message frames relevant in the field of political communication research. First, formal-stylistic frames rooted in media and journalism studies are unrelated to the specific topic framed. Rather, they are concerned with the generic and cross-thematic principles of the presentation and narration of issues or events such as focusing on human interest or conflict. Second, equivalency frames are likewise cross-thematic and unrelated to framed issues or events but the concept originates from psychological research and only considers logically equivalent frames such as the logically interchangeable presentation of gains or losses. Third, emphasis frames are about the substantive aspects of an issue and thus content-related. This conception was first developed in the field of sociology. One can further distinguish issue-specific emphasis frames tied to only one issue (e.g., for the Euro crisis the frame of providing financial aid to countries with overly high public debts only under the condition of deeper European integration) and cross-thematic emphasis frames, which while also concerned with the substantive aspects of a specific issue, can be applied to various other issues (e.g., the environmentalism frame).

Of course, all three types of frames are relevant objects of political framing research, and empirical studies have revealed important effects of the different types of frames. In the field of equivalency framing, for example, studies relatively consistently show that people tend to avoid losses (e.g., Druckman & McDermott, 2008), and when policy problems are framed in terms of losses rather than gains, citizens are more willing to make more risky political choices (Osmundsen & Petersen, 2019), which can threaten the rationality of democratic decision-making. However, equivalency frames are seldom used in real political communication outside the laboratory, because different political options are rarely logically equivalent and communicators do not limit their framing to the presentation of such frames (Slothuus, 2008; Sniderman & Theriault, 2004).

Potentially problematic societal outcomes have also been found in the area of formal-stylistic frames. For instance, empirical studies revealed that frames such as the strategy or conflict frame can increase citizens' political cynicism (de Vreese & Elenbaas, 2008; Elenbaas & Vreese, 2008; Valentino, Beckmann, & Buhr, 2001) or polarize those belonging to different social groups (J. Han & Federico, 2018). Formal-stylistic frames are more prevalent in news coverage than equivalency frames. However, as they are not concerned with the substantive aspects of political issues, they are less important in analyzing the formation of political issue attitudes and rather relevant for examining the side effects of specific types of news media coverage such as political cynicism. In contrast, emphasis frames are highly prevalent in real political communication in all kinds of political messages, not only in news coverage. Therefore, they receive the most attention in political communication research. Moreover, they are content-related by offering interpretations for the substantive content of political issues. As this book is interested in the formation of citizens' issue attitudes under framing conditions, it focuses on emphasis framing and the effects thereof in the following chapters.

Figure 1. Types of frames in political messages



Before considering the effects of emphasis frames in the next subchapter (see **Subchapter 2.1.2**), it is important to define the concept of emphasis frames. The probably most often cited definition is by Entman (1993), and this book follows his general definition stating that to "frame is to *select some aspects of a perceived reality and make them more salient in a communicating text, in such a way to promote a particular problem definition, causal interpretation, moral evaluation and/or treatment recommendation*" (p. 52). This way, emphasis frames "suggest how events should be understood" (Berinsky & Kinder, 2006, p. 641) by focusing on "a subset of potentially relevant considerations" (Druckman, 2001a, p. 230) to construct a specific meaning of the framed issue or event for the audience (Gamson & Modigliani, 1989). Often, an applied emphasis frame not only offers a specific interpretative pattern for an issue, but this salient issue perspective contains a specific valence suggesting how to

evaluate the topic (de Vreese et al., 2011). For example, when a political actor speaks about offshore oil drilling, she or he can use different emphasis frames to provide a specific issue interpretation (cf. Druckman et al., 2013). Here, the actor could employ an environmental frame highlighting the potential negative outcomes for the maritime environment, such as the risk of an accident leading to contamination of the ocean with oil, suggesting a negative evaluation of the topic. Alternatively, the actor could use an economic benefits frame emphasizing the value of drilling, as oil is (still) an indispensable resource for the economy of modern societies, and thus highlight a positive evaluation of offshore oil drilling.

Summary

This subchapter differentiated the concept of emphasis frames from other types of message frames analyzed in political communication research, such as (journalistic) formal-stylistic or equivalency frames. Emphasis frames are content-related frames that can either be issue-specific or cross-thematic when highlighting a specific perspective of an (political) issue or event to construct a certain meaning for it. This book focuses on the effects of citizens' exposure to emphasis frames. As such, the next subchapter (see **Subchapter 2.1.2**) defines in detail an emphasis framing effect.

2.1.2 Emphasis framing effects and issue attitude as the key dependent variable

Despite the common idea that an emphasis framing effect is an effect on individuals, there are two competing approaches to how the literature defines such effects. One line of research bases its definition on the psychological mechanism (i.e., the mediator, see Baron & Kenny, 1986) underlying emphasis framing effects on individuals (Nelson, Clawson, & Oxley, 1997; Nelson, Oxley et al., 1997; Nelson & Oxley, 1999). Researchers using this approach argue that one can only speak of an emphasis framing effect when it results from changes in the importance citizens attribute to the specific dimension highlighted by the frame (i.e., belief importance change, see **Chapter 2.3** for a detailed description of the mediating processes behind emphasis framing effects). If, in contrast, the effect is mediated via changes in the mere cognitive accessibility (Higgins, 1996) of the consideration the frame emphasized, then it is a priming effect (Nelson, Clawson et al., 1997). Furthermore, when the effect is mediated via changes in citizens' beliefs (i.e., learning from new information), authors adopting this approach claim it is a learning effect, not an emphasis framing effect (Nelson & Oxley, 1999).

The other line of research defines emphasis framing effects based on the message characteristic an individual is exposed to, i.e., based on the independent variable of the effect. This approach is more common in the literature and understands emphasis framing effects on individuals as the result of exposure to an emphasis frame (Druckman, 2001b; Slothuus, 2008), regardless of the underlying psychological mechanism that explains the effect (Chong & Druckman, 2007a, 2007b). However, this does not necessarily mean that

this line of research does not differentiate emphasis framing effects, priming effects, and learning effects. Rather, this differentiation occurs on the side of the message, not of the mediator. While a priming effect is the result of an (unrelated) "preceding stimulus or event on how we react […] to some subsequent stimulus" (Roskos-Ewoldsen, Klinger, & Roskos-Ewoldsen, 2007, p. 53), an emphasis frame is an integral part of the same stimulus and directly connects the emphasis on a certain aspect with the issue or event (de Vreese & Lecheler, 2012). In contrast, a learning effect is the result of the provision of new information, not of an emphasis frame highlighting a specific issue perspective in a stimulus (Leeper & Slothuus, 2017).

There are two reasons to favor the latter definitional approach. First, the exact psychological mechanisms underlying emphasis framing effects are still unclear (see **Chapter 2.3**), making it impossible to define emphasis framing effects based on these mechanisms without running into the problem of a shaky definition. Second, it is much more common in the logic of effects research to define an effect on the individual – i.e., the changes in the dependent variable – as the result of exposure to a specific message characteristic, i.e., the independent variable (Potter, 2011). As outlined before in **Subchapter 2.1.1**, emphasis frames in communication (not in thought, see again Druckman, 2001a for this differentiation) are such a message characteristic. Thus, along with most other studies in the literature, this book understands emphasis framing effects as the effects triggered by exposure to an emphasis frame used in a (political) message.

However, to the define such effect as emphasis framing effects, the question remains regarding on which dependent variable of the individual the effect occurs. Again, the literature is equivocal on this point. Empirical studies have investigated emphasis framing effects on numerous of variables such as causal attributions (Haider-Markel & Joslyn, 2001), emotions (Gross & D'Ambrosio, 2004), voting intentions (Bechtel, Hainmueller, Hangartner, & Helbling, 2015; Schemer et al., 2012), behavioral intentions such as information seeking (Borah, 2011b, 2018), the choice and evaluation of political candidates (Domke, Shah, & Wackman, 1998; B. T. Scheufele, 2010; Shah et al., 1996), issue thoughts and issue interpretations (de Vreese, 2004; G. Han, Chock, & Shoemaker, 2009; Shen, 2004a, 2004b), perceptions of risks (Cobb, 2005), cognitive complexity (Huang, 2010; Shah, Kwak, Schmierbach, & Zubric, 2004), and issue attitudes (Brewer, Graf, & Willnat, 2003; Chong & Druckman, 2007a; de Vreese et al., 2011; Igartua & Cheng, 2009; Lecheler, Keer, Schuck, & Hänggli, 2015; Nelson, Clawson et al., 1997; Tewksbury, Jones, Peske, Raymond, & Vig, 2000; Zilli Ramírez & Verkuyten, 2011).

Some authors prefer a narrow definition and only judge effects of emphasis frames on individuals' issue interpretation (or issue thoughts) as emphasis framing effects, while they define attitudinal (i.e., persuasive) effects only as a possible but not necessary subsequent outcome of these emphasis framing effects (e.g., Matthes & Schemer, 2012). In contrast, most other authors focus on (issue) attitude as the central dependent variable of emphasis framing effects, because most emphasis frames contain a specific valence that can be attitudinally relevant (e.g., Busby et al., 2018; Chong & Druckman, 2007c; de Vreese et

al., 2011; Slothuus, 2008). However, is it helpful to limit the definition of emphasis framing effects to a certain dependent variable? This could easily create blind spots on the effects of an emphasis frame on other variables located at the individual level. Thus, this book defines an emphasis framing effect as *any effect the exposure to an emphasis frame in a political message exerts on an individual*.

Nevertheless, this book focuses in the following on only one dependent variable affected by emphasis frames, namely citizens' attitude toward the framed (political) issue or event. First, it is the most often analyzed dependent variable of emphasis framing effects (de Vreese & Lecheler, 2012). This ensures that the analysis presented later can draw on the insights of previous research and can contribute to improving understanding of this most often analyzed dependent variable of emphasis framing effects. Second, a specific issue attitude is the classic outcome a political actor aims for when applying an emphasis frame to an issue. Third, according to the theory of planned behavior, (issue) attitude is one of the central variables leading to further behavioral outcomes (Ajzen, 1991). These further outcomes can be politically relevant, such as information-seeking, political participation, or voting. Thus, it is important looking at the effects of emphasis frames on citizens' issue attitude, not only at issue interpretations, which might be less consequential.

Given that this book focuses on the attitudinal effects triggered by exposure to an emphasis frame and thus, understands these frames in political messages as a specific persuasive tool to influence citizens' issue attitude toward the framed (political) topic, the term issue attitude must be briefly defined. In general, an "attitude represents a summary evaluation of a psychological object" (Ajzen, 2001, p. 28) and "denote[s the] overall degree of favorability" (p. 29) attributed to the attitude object. Accordingly, an *issue attitude indicates the degree of being against or in favor of a specific political topic*. Examples of political issue attitudes include how strongly someone supports or opposes governmental subventions for a manned space flight to the planet Mars, the introduction of a new tax on carbon dioxide emissions, or a quota for women in leadership positions.

Emphasis frames (see **Subchapter 2.1.1**) and emphasis framing effects on citizens' issue attitude (see **Subchapter 2.1.2**) have now been defined, clarifying what this book is about. Next, **Chapter 2.2** presents the results of empirical studies that investigated the attitudinal effects of simple emphasis frames to assess the actual persuasiveness thereof.

2.2 Simple emphasis framing effects

2.2.1 Empirical results on simple one-sided emphasis framing effects

Besides the few exceptional works employing linkage analyses that match media content analyses with survey data on citizens' exposure to (differently framed) content and its subsequent attitudinal effects over time (Matthes, 2007b, 2008; Matthes & Schemer, 2012; Schemer et al., 2012; Wettstein, 2012), most studies on emphasis framing effects use experimental designs. This is especially the case when studies investigate simple emphasis framing effects. This subchapter focuses on the experimental studies of simple emphasis framing effects, although the book later presents some of the insights from the more complex linkage analyses that also consider individual differences in susceptibility to emphasis framing effects (see **Subchapter 2.4.1**) and changes in these effects over time (see **Chapter 2.6**). A *simple emphasis framing effect is a difference in issue attitude evoked by single exposure to one emphasis frame compared to single exposure to another emphasis frame for the same issue but with the opposite valence. The occurrence of this effect does not rely on further individual or contextual conditions*. In abstract terms, a simple emphasis framing effect is a main effect of the factor emphasis frame containing at least two different framing levels. Moreover, this main effect is not allowed displaying a disordinal interaction effect with further variables, as a disordinal interaction would indicate that the emphasis framing effect does not exist on aggregate, but works differently for specific subgroups or contextual situations (Reinard, 2006, pp. 214–220).

When experimental studies investigate simple emphasis framing effects, they mostly compare the one-sided framing of an issue between two emphasis frames with the opposite valence. They rarely consider more frames or a control group without explicit frames (see the results of a meta-analysis by Leeper & Slothuus, 2017, which investigated more than 100 studies on emphasis framing effects). That is, in most studies, each experimental group receives only one uncontested emphasis frame for the same issue to assess how different framing leads to different issue attitudes (cf. Sniderman & Theriault, 2004). Furthermore, most studies rely on self-produced framing stimuli that mimic media products (e.g., news articles, TV news stories, social media posts), not on the real content of political communication (e.g., de Vreese et al., 2011; Nelson & Oxley, 1999; Slothuus, 2008). This ensures experimental control over the stimulus, guaranteeing that everything is constant for different framing conditions except the frame of interest (Lecheler & de Vreese, 2011). That is, these studies prefer the internal validity of the causality test over the external validity of the stimulus material for generalization to real media content (de Vreese, 2004).

However, this does not necessarily mean that the employed stimuli are unrealistic and do not allow for any conclusions beyond the used stimuli. Often, the production of stimuli follows results of previous analyses of real political communication content (e.g., de Vreese et al., 2011) and the general stylistic criteria of media content such as the structure of a news article (e.g., Slothuus, 2008). This ensures the realistic analysis of the effects of the frames prevalent for a specific issue and can thus increase the external validity of the

stimuli up to a certain extent. In addition, most constructions of stimuli follow the established standard of using *core elements* that present the same information about a topic or event across framing conditions, and *frame-carrying elements*, which differ according to the framing condition and emphasize a different aspect of the issue (de Vreese & Lecheler, 2012). These frame-carrying elements, also called *framing devices*, include the headline, lead, visual material, quotes, metaphors, exemplars, or concluding remarks of a political message (Gamson & Modigliani, 1989; Z. Pan & Kosicki, 1993; Tankard, 2001).

For instance, Shen (2004b) constructed two differently framed versions of a newspaper article on stem cell research based on actual news coverage and varied the headline, the introduction, and concluding paragraph, while holding constant "a core section of two paragraphs with background information" (p. 406). In the condition with the "medical benefits" emphasis frame, the article used the headline "Expanding Stem Cell Research Brings Medical Benefits" (p. 405), and the introduction and concluding paragraph described the issue emphasizing the benefits of expanding stem cell research for progress in medical treatments. In contrast, in the condition with the "ethical" emphasis frame, the same newspaper article started with the headline "Expanding Stem Cell Research Raises Serious Moral Questions" (p. 405), and the introduction and end of the article focused on the ethical question of how to deal with (irreversible) genetic interventions. In both experimental conditions, the different introductions and conclusions were of the same length and used the same writing style. Only the emphasis frame varied between the two experimental groups.

The results of this study conducted with participants from the US showed that participants exposed to the medical benefits emphasis frame afterwards supported stem cell research significantly more strongly than those that read the news article with the ethical frame (Shen, 2004b). Moreover, the study replicated the findings of a simple emphasis framing effect for a second issue, namely oil drilling in the Arctic National Wildlife Refuge. Participants exposed to an environmental frame for this issue emphasizing the danger of drilling for wildlife opposed drilling in the Arctic significantly more strongly than did those exposed to the economic benefits frame, which highlighted the positive effects of drilling for the economy (Shen, 2004b).

In another experimental study on simple emphasis framing effects, Tang and Huhe (2014) showed participants from China an online news article dealing with the government's space program. One group received an "advancements in technology" emphasis frame highlighting that the program showcases China's technological progress, thereby employing the official view favored by the government. The other group was exposed to an alternative "social welfare" frame emphasizing that the space program wasted valuable financial resources that could have been better invested in improving people's standard of living. Results revealed that participants who read the social welfare frame opposed the space program significantly more strongly than those exposed to the technology frame (Tang & Huhe, 2014).

Slothuus (2008) also investigated simple emphasis framing effects in an experimental setting using respondents from Denmark and a different political issue. Specifically, participants read a news article on a draft of a new social welfare bill proposed by the government that would reduce welfare benefits after the first six months of unemployment. One emphasis frame for this topic, the "job frame," highlighted that the bill would function as an economic incentive to search for a new job, which would help unemployed citizens re-enter the workforce. In contrast, the "poor frame" emphasized that the new bill would not help reduce unemployment, but would increase the number of people who are poor. Again, the results of this study showed the importance of emphasis framing in the formation of issue attitudes. Participants exposed to the job frame favored the implementation of the new bill significantly more strongly than those reading the news story about the bill with the poor frame. Unlike the two studies presented above, this one also contained a control group reading a news story unrelated to the new bill. Both framing conditions also differed significantly from the control group in the direction of the employed emphasis frame (Slothuus, 2008).

A study by Nelson and Oxley (1999), in which two experiments were conducted with participants from the US, provides two further examples of simple emphasis framing effects. In the first experiment, respondents read a newspaper story dealing with a land development project in Florida. One emphasis frame focused on the possible economic gains if the new project was realized by presenting quotes highlighting the creation of jobs and increase in tax revenues for the region. The other frame was an environmental frame emphasizing that the new infrastructure project would threaten some species with extinction if implemented. As expected, issue attitudes differed significantly depending on exposure to the different emphasis frames. Respondents in the condition with the economic frame supported the land development project significantly more strongly than participants reading the same news article but with a focus on the environment.

In the second experiment dealing with the welfare reform of a "family cap" that would deny single mothers additional financial benefits after the first child, the simple emphasis framing effect was not statistically significant (Nelson & Oxley, 1999). However, the descriptive statistics revealed a noticeable difference in the expected direction between the two conditions employing different emphasis frames. When the welfare reform was framed as a "threat to children" by including quotes and photos to emphasize that it would punish innocent children, participants opposed the reform more strongly than did those exposed to the "personal responsibility" emphasis framing, which highlighted that mothers would have to learn to shoulder the financial burden of their reproductive decisions.

Nelson also lead a further experimental study on the probably most often cited example of emphasis framing effects: the framing of a planned rally by the Ku Klux Klan, a radical white supremacist organization (Nelson, Clawson et al., 1997). When a "free speech" emphasis frame highlighted in a real TV news item that civil rights allow everyone to conduct a rally, US participants exposed to this news item were significantly more tolerant of an approval of the planned rally compared to respondents receiving the "public

order" frame, which underlined the danger of escalating violence during the rally. To ensure internal validity beyond the selected real TV news items with different emphasis frames, which might also have differed in terms of other dimensions, the authors fully replicated their findings in a second experimental test employing a constructed newspaper article with full control over the framing conditions (Nelson, Clawson et al., 1997).

In three further experiments conducted with US participants, Nelson (2004) investigated emphasis framing effects by manipulating newspaper articles for three other political issues. The first experiment dealt with the topic of an adoption reform that would allow adopted children to obtain information on their biological parents, thus not protecting the parents' identity. The "children's rights" emphasis frame highlighted that it is the fundamental right of children "to know who you are and where you came from" (p. 588), whereas the "parents' rights" frame emphasized the importance of respecting the right of protecting the identity of biological parents who put their child up for adoption. As expected, participants exposed to the children's rights emphasis frame supported the adoption reform significantly more strongly than did respondents who read the news article with the parents' rights frame.

The second experiment investigated the issue of affirmative action for minorities regarding their admission to universities, i.e., the selection of students based not only on previous grades and test scores, but also on racial and class criteria to increase the share of students from underrepresented groups at universities (Nelson, 2004). This topic was framed in two different ways for participants. One group received an "excellence" emphasis frame that focused on universities' mission to select students based only on test scores to ensure that the best-qualified students receive places at universities regardless of race or class. In contrast, the second group of participants was exposed to an "opportunity" frame emphasizing that universities also have a societal role and should give minorities additional opportunities to obtain higher education. The results showed that the second group supported measures for affirmative action significantly more strongly than those in the group with the excellence emphasis frame.

The last experiment also demonstrated significant attitudinal effects of emphasis frames (Nelson, 2004). In this experiment, the issue was granting school vouchers financed by taxpayers to poor families so that these families could freely decide which school their children would attend. The emphasis frame "school quality" explained this issue by focusing on the potential of school vouchers to increase the quality of public schools, as the vouchers would increase the competition between schools for pupils with the vouchers. The "church-state" frame presented a different viewpoint on the issue by highlighting that vouchers would lead to the hidden financial sponsoring of private schools with taxpayers' money, as most families would decide to use their voucher for private schools. Moreover, religious organizations would own most private schools, through which they would be indirectly financed by the state, which would counter the idea of the separation of church and state. Again, exposure to one of these frames produced a significantly different attitude

toward the issue than exposure to the other. The school quality emphasis frame led to stronger support for school vouchers than the church-state frame (Nelson, 2004).

It would be easily possible to expand the list of experimental studies consistently revealing significant simple emphasis framing effects for a wide range of other political issues including government assistance to the poor, government spending on AIDS, affirmative action (all Nelson & Kinder, 1996), enlargements of the European Union (de Vreese et al., 2011; Schuck & de Vreese, 2006), welfare reforms (Shen & Edwards, 2005), financial investments in new European Union member states (Lecheler & de Vreese, 2012), NATO's military interventions in Kosovo (Berinsky & Kinder, 2006), and campaign finance laws (Druckman & Nelson, 2003), to name just a few further examples. However, reviewing all these studies would unnecessarily increase redundancy without providing deeper insights into simple emphasis framing effects.

Thus, it seems more appropriate to look beyond the statistical significance of these effects and briefly review the effect size of emphasis framing effects. According to a meta-analysis by Leeper and Slothuus (2017), which included more than 100 studies on emphasis framing effects, the mean effect of treatment-treatment comparisons (i.e., between two different emphasis frames) was $d = 0.45$, which can be considered a medium effect size (cf. Cohen, 1992). That is, simple emphasis framing does not strongly influence citizens' attitudes in the sense of producing extremely different and polarized issue attitudes after a single exposure. However, emphasis framing still leads to notable attitudinal differences between citizens exposed to the different emphasis frames. Note though that the average effect of a single emphasis frame compared to a control group without an explicit frame is smaller: $d = 0.28$ (Leeper & Slothuus, 2017), which is a rather weak effect size. This implies that notable attitudinal differences mostly occur when different citizens are exposed to different emphasis frames.

2.2.2 Summary and preliminary implications of simple emphasis framing effects for assessing citizens' rationality in attitude formation

(Experimental) studies on simple emphasis framing effects investigated how citizens' issue attitudes differ depending on their exposure to a one-sided emphasis frame highlighting a specific issue perspective compared to situations in which they are exposed to another one-sided emphasis frame focusing on another aspect of the issue with the opposite valence. As noted in **Subchapter 2.2.1** before, at least the published results consistently revealed significant simple emphasis framing effects with a relative substantial effect size, implying that simple changes in the frame produce significantly different issue attitudes. (However, see Fanelli, 2012, for the general problem of publication bias in science favoring significant results over insignificant results, which could suggest that insignificant framing effects are simply less available in the literature.) Moreover, these simple emphasis framing effects occurred for the framing of various political issues and citizens from countries worldwide, indicating that the phenomenon is rather invariant to culture and political content.

Based on these results, it seems reasonable to summarize that simple emphasis frames affect considerably citizens' issue attitudes. That is, it seems that citizens simply form their issue attitude based on the issue perspective made more salient in a political message, and not (or better: less) consider less salient aspects of the issue or those omitted in a specific message. Given this often-replicated result, it is probably justified to state that citizens are rather susceptible to base their attitudes on emphasis frames that require not much more from a communicator than highlighting the relevance of certain considerations. Whereas other means of persuasion may need much more resources to increase the likelihood of affecting citizens' attitudes, such as building credible reputation of the communicator or the scientific production of compelling thematic facts for a specific issue position, it seems public opinion can be influenced by employing nothing more than an emphasis frame. Therefore, scholars consider emphasis framing a powerful political tool for political actors, because it requires only minimal costs to gain public support and thereby, political legitimacy for one's issue position (e.g., Jacoby, 2000).

What does the relative strength of simple emphasis framing effects mean for assessing citizens' rationality in attitude formation? Emphasis "framing effects suggest that distributions of public preferences are arbitrary, and that political elites can manipulate popular preferences to serve their own interests" (Chong & Druckman, 2007b, p. 120). When citizens prefer drilling in the Arctic after being exposed to an economic emphasis frame, but oppose it, when exposed to an environmental frame, it is difficult to state that this is a rational shift in attitude. Rationality can be defined as the consistency and coherence of preferences as long as the substantive information for (or against) a specific preference does not change (Tversky & Kahneman, 1981). Emphasis framing effects seem to violate this principle of rationality, as different emphasis frames lead to unsubstantiated and thus arbitrary attitudinal changes that do not follow the constant thematic core facts about an issue, but rely on easily changeable frame emphases that only alter how the information is presented. Therefore, particularly earlier literature on emphasis framing effects considered simple emphasis framing a threat to rational attitude formation (cf. Druckman, 2001a).

However, not all authors agree with this conclusion (e.g., Chong & Druckman, 2007b; Druckman, 2001a; Leeper & Slothuus, 2017), as later studies on emphasis framing effects revealed that these effects tend to be more complex and rely on additional conditions. This suggests that susceptibility to emphasis framing effects is less arbitrary than initially expected. Thus, the conclusion of irrational attitude formation based on emphasis framing should be understood as preliminary. It is explored in greater detail when examining moderated emphasis framing effects (see **Subchapter 2.4.3** and **Subchapter 2.5.4**) and the theoretical criticism of the construction of emphasis frames in empirical research (see **Chapter 2.8**). Before then, it is relevant to first gain deeper insights into how simple emphasis framing effects work on the psychological level by looking at the mechanisms that explain (i.e., mediate) these effects (see next **Chapter 2.3**).

2.3 Cognitive mediators of emphasis framing effects

2.3.1 Cognitive accessibility vs. applicability

The previous **Chapter 2.2** showed that simple emphasis frames can considerably influence citizens' issue attitudes. However, the question of *how* these effects work was not sufficiently answered. Research on psychological communication effects is always interested in testing not only whether certain message characteristics such as emphasis frames exert attitudinal effects but also in investigating the psychological mechanisms that lead to these effects. Examining these mechanisms can offer additional explanations of *why* an effect occurs, as it opens the "black box" of what happens within an individual that leads to a specific outcome after exposure to a specific message (Holbert & Stephenson, 2003). This chapter aims to offer such explanations for the effects of emphasis frames. Such mechanisms are referred to in the literature as *mediators* (Baron & Kenny, 1986). In the process of a communication effect (or any other psychological effect), mediators are variables located between the cause of an effect (i.e., the independent variable) and the effect of interest itself (i.e., the dependent variable). That is, the logic underlying mediation is simply that an independent variable affects the mediator variable first and then, the mediator influences the dependent variable. For instance, when the independent variable is that the same message is presented to an individual as originating either from an expert or layperson, this variable first affects how credible the individual perceives the message to be (i.e., the mediating variable). In turn, the differently perceived credibility of the message then influences the dependent variable of how strongly the individual adopts an attitude in accordance with the direction of the message.

The majority of theoretical and empirical studies on the mediators of emphasis framing effects focuses on cognitive mediators (cf. de Vreese & Lecheler, 2012; Matthes, 2007b, pp. 91–127), i.e., on how frames affect citizens' processing (and evaluation) of information, which then influences their issue attitudes. While interest in emotions as a complementary mediator of emphasis framing effects has recently increased (e.g., Clifford, 2019; Feinholdt, Schuck, Lecheler, & de Vreese, 2017; Kühne, Weber, & Sommer, 2015), this book focuses on the better-established cognitive mediation mechanisms underlying framing.

Accessibility and applicability as antagonistic mediators

Among these cognitive mechanisms, an often debated question is whether emphasis framing effects influence citizens' issue attitudes because the emphasized frame increases the cognitive *accessibility* of a certain aspect of an issue or because it influences the cognitive *applicability* of the aspect the emphasis frame made more salient (Cacciatore et al., 2016; Nelson, Clawson et al., 1997; Price & Tewksbury, 1997; D. A. Scheufele & Tewksbury, 2007). Both concepts are concerned with the activation of potentially available knowledge stored in the long-term memory, which must be activated in the working memory when processing information. However, the concepts differ in terms of when and how this

activated knowledge is used for interpreting a stimulus, i.e., incoming information (Higgins, 1996). On one hand, accessibility refers to the general activation potential of a specific piece of knowledge for a specific individual (i.e., chronic accessibility). For example, the ease with which a person can activate the concept of racial discrimination might differ between someone often confronted with discrimination in the past and a person without such experience. On the other, a stimulus can make a specific concept or consideration temporarily accessible even for citizens for whom this consideration is less chronically accessible. For instance, even a person without personal experiences of discrimination can activate the concept thereof when it is salient enough in a stimulus and as long as the person has knowledge of this concept, i.e., as long as the consideration is available in the person's memory (Higgins, 1996).

Some scholars argue that emphasis framing effects work rather unconsciously by increasing the temporary accessibility of a specific aspect of an issue. Citizen then simply employ this accessible consideration when forming their attitude (e.g., McCombs & Ghanem, 2001). That is, these scholars understand framing effects as the result of a pure salience-based mechanism similar to the process underlying second-level agenda setting and priming, which both also work via increasing the accessibility of specific considerations, which then are more likely employed by a person at the time of attitude formation (cf. D. A. Scheufele & Tewksbury, 2007). The mechanism of accessibility relies on the idea that citizens are "cognitive misers" (Fiske & Taylor, 1991) who want to avoid cognitive efforts and rely on heuristics that are often sufficient to come up with judgments that seem valid. An easily available (i.e., accessible) consideration can be such a heuristic, as the easy retrieval of the consideration suggests its validity (Tversky & Kahneman, 1973). That is, accessibility-based accounts of emphasis framing effects assume that the salience of a certain aspect of an issue because of emphasis framing increases the temporary cognitive accessibility of this aspect. Citizens base their issue attitude on this more easily accessible consideration without further reasoning (cf. Cacciatore et al., 2016). For example, when a person receives an environmental frame highlighting the negative consequences of fracking for the environment, these environmental considerations are more accessible for the person than other considerations such as economic benefits. The person then forms her or his attitude toward fracking based on the more accessible environmental aspect activated in the working memory without elaborating why the attitude was based on the environmental aspect and not another consideration.

In contrast, other scholars define emphasis framing effects as applicability-based effects (e.g., Cacciatore et al., 2016; Price & Tewksbury, 1997; D. A. Scheufele & Tewksbury, 2007). Broadly, applicability can be defined as the fit between a piece of a person's knowledge and a stimulus. As such, applicability describes how well a stimulus matches an individual's knowledge structure (Higgins, 1996). If information in a stimulus fits the person's knowledge, the probability is higher that this information is activated in the working memory. Moreover, the likelihood increases that a person will activate further internal knowledge related to this information through spreading activation. That is, the

activation of the first piece of information leads to the activation of related information contained in a person's long-term memory (B. T. Scheufele & Scheufele, 2010). On one hand, like accessibility, applicability is a characteristic of an individual representing how much a stimulus is aligned with that person's prior knowledge. For instance, when a stimulus contains information on racial discrimination, this stimulus can be less applicable for a person who has not experienced discrimination and more applicable for someone who has. For the latter person, the stimulus might also activate this past experience when referring to the concept of discrimination.

However, unlike accessibility, applicability is not necessarily an unconscious process of knowledge activation and usage. A person can be conscious of whether a stimulus (or stimulus feature) fits with her or his knowledge structure (i.e., "perceived applicability," see Higgins, 1996, p. 136). Furthermore, like accessibility, applicability is not only a static (or better: chronic) characteristic of a person's information processing behavior, but can also be influenced by stimuli. A stimulus feature can add new connections to a person's knowledge structure and thus increase the applicability of the frame with the other information contained in a stimulus (Price & Tewksbury, 1997). For example, a person who has not been racially profiled by the police can learn via a stimulus that the police check some groups of persons more often than others, and can subsequently relate police controls with the concept of discrimination.

Translating the concept of applicability effects to emphasis framing effects, scholars such as Cacciatore et al. (2016) and D. A. Scheufele and Tewksbury (2007) argue that the effects of emphasis frames work by increasing the applicability of the emphasized frame in interpreting the issue. In other words, through emphasis framing, citizens build a cognitive connection between the issue and the more salient frame, which differs from an accessibility-based effect in three important ways. First, applicability effects can be more stable than accessibility effects, as they are not tied to a temporary increase in the cognitive accessibility of the frame that can diminish soon after exposure to a stimulus, but actually connect the frame with the issue. This connection can then be stored in the memory and more easily reactivated by spreading activation in subsequent situations of exposure to information on the issue (Price & Tewksbury, 1997; D. A. Scheufele & Tewksbury, 2007). Second, applicability effects can be more conscious than accessibility effects, as persons judge the perceived applicability of the frame for the issue (Chong & Druckman, 2007a). Third and closely related to the previous point, because applicability judgments can be more conscious and depend on citizens' general knowledge structure, which also influences what aspects are judged as applicable besides those suggested by a frame, the strength of emphasis framing effects can differ between citizens with different backgrounds. In contrast, framing effects based on accessibility unrealistically assume that emphasis frames affect every person equally. In this case, attitudes will only be based on an easily manipulated increase in the temporary accessibility of the frame, which is then unconsciously employed for interpreting the issue, regardless of whether the frame fits an individual's general knowledge and preferences (Cacciatore et al., 2016). Given these important differences

between effects based on accessibility and applicability, authors such as D. A. Scheufele and Tewksbury (2007) and Cacciatore et al. (2016) conclude that emphasis framing effects work differently from the accessibility-based effects of priming and second-level agenda setting, and are exclusively the result of an applicability effect.

The empirical literature does not provide much evidence of the mediation of emphasis framing effects via changes in the accessibility of an emphasized frame, whereas conscious changes in applicability judgments based on emphasis frames have been demonstrated several times as a mediator of emphasis framing effects (e.g., de Vreese et al., 2011; Druckman, 2001b; Matthes & Schemer, 2012; Nelson, Clawson et al., 1997). However, accessibility is less frequently analyzed than applicability in empirical research on emphasis framing effects, which has much to do with the more complex measurement of unconscious temporary cognitive accessibility (de Vreese & Lecheler, 2012). In fact, the often cited conclusion that accessibility has no role in emphasis framing effects is based only on a single study by Nelson, Clawson et al. (1997). They explicitly measured the temporary cognitive accessibility of emphasis frames using a reaction time task, revealing that emphasis framing did not affect the accessibility of certain frames. Specifically, when a planned rally by the Ku Klux Klan was framed with a "free speech" or "public order" frame, the accessibility of the respective frame was independent of exposure to one of these frames. In contrast, exposure to the frames changed how applicable citizens judged the frame to be in interpreting the issue (Nelson, Clawson et al., 1997). However, based on a single study, it is probably inappropriate to entirely reject the relevance of cognitive accessibility as a mediator of emphasis framing effects. Moreover, one should also question whether applicability and accessibility are actually two antagonistic mediators, of which only one is the "true" mediator of emphasis framing effects, as debated in the literature by the described different schools of thought.

Accessibility and applicability as complementary mediators

Rather than understanding accessibility and applicability as two incompatible mechanisms of emphasis framing effects, Chong and Druckman (2007c, 2007a, 2007b) synthesize both to model the mediation processes underlying emphasis framing effects. In their view, attitude formation takes place based on the available beliefs citizens have stored in their long-term memory. When forming an attitude, some of these beliefs are either more chronically accessible because of citizens' frequent retrieval thereof in the past, or temporarily more accessible because of exposure to a stimulus pushing the accessibility of a certain belief over others. Sometimes, citizens unconsciously base their attitude on more accessible beliefs without further reasoning (especially when they are less motivated to engage in conscious attitude formation, see Chong & Druckman, 2007c, 2007b). In other situations, the higher accessibility of a specific consideration is in itself not sufficient to influence citizens' attitudes but citizens consciously judge whether the accessible consideration is also applicable to form the suggested attitude.

According to Chong and Druckman (2007b), emphasis frames can work on all three levels of the attitude formation process. Thus, the three levels should be interpreted as complementary mediation processes (see also Baden & Lecheler, 2012). Such frames can a) make new beliefs available by adding them to a person's knowledge structure or changing existing beliefs; b) increase the temporary accessibility of a certain belief already available in citizens' long-term memory; and c) strengthen the perceived applicability of the frame, i.e., the perceived appropriateness to judge the issue based on a certain frame. Here, accessibility is not ruled out as a mechanism of emphasis frames, but represents one way in which frames can influence citizens. Sometimes, increased accessibility is already sufficient to exert attitudinal effects. At other times, increased accessibility alone does not lead to an emphasis framing effect. However, even in the latter case, it is at least an "intermediary mechanism" (de Vreese & Lecheler, 2012, p. 297), because even if framing effects ultimately depends on increased applicability, this can only happen for accessible considerations activated in the working memory (Baden, 2010).

Despite that the theoretical relevance of accessibility changes for the mediation processes underlying emphasis framing effects should not be ruled out, the often replicated empirical result that changes in the conscious judgment of applicability mediate the attitudinal effects of frames cannot be ignored (e.g., de Vreese et al., 2011; Druckman & Nelson, 2003; Nelson, 2004). This implies that changes in accessibility are often not sufficient to ensure that an emphasis frame affects citizens' issue attitudes because if accessibility were the decisive mediator, the result that emphasis frames are finally mediated via changes in the perceived applicability of a frame would not be obtained. However, thus far, which type of considerations emphasis frames make more applicable remains unclear. Hence, next **Subchapter 2.3.2** offers deeper insight into the components of an attitude expected to obtain a higher degree of applicability because of emphasis framing, through which these frames ultimately affect citizens' issue attitudes.

2.3.2 The theory of belief importance change vs. belief content change

Subchapter 2.3.1 established that emphasis framing effects mainly work by increasing the applicability (i.e., the appropriateness) of certain considerations in interpreting an issue. Now, it is important to clarify what components of an attitude display increased applicability because of emphasis framing. The most prominent theoretical answers to this open question is provided by Nelson, Oxley et al. (1997). They draw on a formalized conception of attitudes introduced by Ajzen and Fishbein (1980) that enables distinguishing the attitude components emphasis frames might affect. According to Ajzen and Fishbein (1980), an attitude can be understood as the summarized evaluation A that is on one hand based on the *beliefs* about the attitude object (v_i, where v is the value of this belief and $_i$ the individual beliefs with a specific valence). On the other, the summarized evaluation is the result of how important these beliefs are *weighted* in forming the attitude (i.e., v_i multiplied

by w_i, where w is the weight given to v_i individual beliefs with a specific valence). This leads to the following (idealized) formula of specific attitude A:

$$A = \sum v_i w_i$$

When forming an attitude toward genetically modified crop plants (A), for example, a person might have five beliefs (vi) regarding this topic activated in the working memory (i.e., accessible for attitude formation). One belief is that such plants are more resistant to heat and drought, enabling their efficient use in poor countries experiencing hunger and climate change. This is a positively valenced belief toward genetically modified plants (v_{1+}). Another belief is negatively valenced, namely that genetically modified plants reduce biodiversity (v_{2-}). The third belief also has a negative valence, as it is concerned with the problem that changes in the genes of plants could be irreversible, which might have unforeseeable long-term consequences for nature (v_{3-}). The person's fourth belief is that genetically modified plants are a typical American thing, which is for the exemplary person rather negatively connoted (v_{4-}). In contrast, the last belief is positively valenced, namely that consumer prices for food in industrialized countries can decrease when this food is based on genetically modified plants and not on non-modified plants (v_{5+}). However, the person does not weight all beliefs as equally important, i.e., not all beliefs contribute equally strongly to the person's overall attitude. For instance, the person weights the fourth ($v_{4-}w_{4-}$) and fifth ($v_{5+}w_{5-}$) beliefs as rather unimportant beliefs, but judges the first three beliefs as equally important for the attitude ($v_{1+}w_{1+}$, $v_{2-}w_{2+}$, $v_{3-}w_{3+}$). As two of these three beliefs are negatively valenced, the person's summarized attitude toward genetically modified crop plants would be rather negative overall, i.e., rather against such plants.

Following Nelson, Oxley et al. (1997), messages can influence (idealized) equations of attitudes via two routes. First, a message can *add new beliefs or alter the content of existing beliefs* (i.e., *belief content change*) toward the attitude object, thereby altering the equations of an attitude (e.g., a newly added positively valenced belief makes the overall attitude more positive). Second, a message can *alter the importance of the beliefs* (i.e., *belief importance change*) already contained in a person's attitude equation toward the attitude object (e.g., higher importance of a positively valenced belief leads to a more positive summarized attitude). According to the authors, classic persuasion changes citizens' beliefs toward the attitude object by providing new information that either changes the content of existing beliefs or adds new beliefs. In this way, a message convinces a person that the attitude object "possesses certain good or bad attributes" (Nelson, Oxley et al., 1997, p. 225). In contrast, the authors contend that emphasis framing effects work exclusively by changing the importance of beliefs, as they explain to citizens "what an issue is about" (Z. Pan & Kosicki, 1993, p. 55) and which consideration is actually important, thus becoming the standard of reference for interpreting the issue. As such, emphasis frames increase the applicability of considerations of relevance and importance but do not change the beliefs themselves or their valence (Nelson, Oxley et al., 1997). Thus, the mediating mechanism proposed by Nelson, Oxley et al. (1997) rules out the idea that emphasis framing effects also work by making new beliefs available, which Chong and Druckman (2007b) consider a cognitive

mediator of emphasis framing effects (see **Subchapter 2.3.1**). However, Chong and Druckman (2007a) also consider the increased applicability of the frame (i.e., belief importance change) as most relevant mediator. Empirical evidence is described in **Subchapter 2.3.3** regarding which of the two mechanisms (belief content change / availability vs. belief importance change / applicability) predominates. Before then, it is helpful to illustrate the difference between these two mechanisms using again the example of a summarized attitude toward genetically modified crop plants.

Persuasion based on providing new information in a message can add the new belief to the person's attitude that allowing genetically modified plants ensures high-tech jobs are retained in the country, while prohibiting such plants would drive an exodus of expert knowledge to other countries where the genetic modification of plants is allowed (v_{6+}). We now assume that the person autonomously attaches high importance to this new belief (i.e., without additional message features that also increase the importance of this belief). As this new belief has a positive valence toward such plants ($v_{6+}w_{6+}$), the person would have six beliefs activated in mind when forming her or his attitude. Two beliefs are judged as less important ($v_{4-}w_{4-}$, $v_{5+}w_{5-}$), and four beliefs in the attitude equation are considered equally important. Of these four, two are positively valenced and two negatively valenced. Thus, because the new and positively valenced belief was added by a message containing this new persuasive information, the person created an adjusted attitude no longer (slightly) against genetically modified plants, but somewhat more supportive and in sum ambivalent regarding the issue.

According to Nelson, Oxley et al. (1997), the effect of an emphasis frame works differently. Such frames contained in a message do not add new beliefs to the attitude equation. Thus, the content of beliefs regarding genetically modified plants remains unchanged and still contains the same five beliefs with an unchanged valence. This is because they were already present before exposure to a message with the frame. However, the emphasis frame "humanitarianism" would highlight in the message the importance of the already existing belief that genetically modified plants are more resistant to heat and drought, allowing the more efficient use of these plants in poor countries experiencing hunger and climate change (v_1). For instance, the frame would explicitly emphasize how important it is to not restrict the use of genetically modified plants, as they are such a powerful tool with which to fight hunger in the world. This increases the importance the person attributes to this positively valenced belief so strongly that its importance becomes higher ($v_{1+}w_{1+++}$) than the importance that the person attaches to the other somewhat important negatively valenced beliefs in the attitude equation ($v_{2-}w_{2+}$, $v_{3-}w_{3+}$). Subsequently, the overall attitude equation is different compared to the situation before without emphasis framing. The person's overall attitude is now rather in favor of genetically modified crop plants, because the importance of beliefs changed, not the content thereof.

However, the proposition by Nelson, Oxley et al. (1997) that the applicability mechanism of belief importance change is the central mediator of emphasis framing effects without working also through belief content change is so far only theoretical. Next,

Subchapter 2.3.3 describes how well this proposition is underlined by empirical results for these two mediators.

2.3.3 Empirical results on belief importance change and belief content change

Studies investigating only belief importance change

The empirical studies in the literature that tested the competing mediators of belief importance change and belief content change for the effects of emphasis frames on citizens' issue attitude can be distinguish as those that only tested belief importance change as a mediator and other studies that tested both mediators simultaneously. The goal of the former type of studies was to show that belief importance change plays a role as a mediator at all, which is relevant in establishing it as a mediator in the first place. However, the latter studies conducted more rigorous tests of belief importance change as the only relevant mediator of emphasis framing effects. In these studies, this mechanism was tested in competition with the mechanism of belief content change, which according to the theory by Nelson, Oxley et al. (1997), should not mediate the effects, as explained above in **Subchapter 2.3.2**.

The first study to investigate the mediator of belief importance change without also examining belief content change was conducted by Nelson and his colleagues. They performed two experiments, both dealing with the topic of a planned Ku Klux Klan rally (Nelson, Clawson et al., 1997). In both experiments, participants were either exposed to a "free speech" frame highlighting the importance of the civil liberty of freedom of expression or a "public order" frame emphasizing the relevance of security that would be threatened by approval of the rally (see also **Subchapter 2.2.1**). In addition to measuring participants' issue attitude as the final dependent variable, Nelson, Clawson et al. (1997) in both experiments asked participants after frame exposure how important they judged the considerations of free speech and public order in interpreting the issue. They also measured the cognitive accessibility of both constructs in the first experiment. In the first experiment, cognitive accessibility did not differ depending on frame exposure and thus did not mediate the emphasis framing effect. In contrast, the results of both experiments revealed that the public order frame significantly increased the importance participants attached to this consideration, which significantly reduced their support for approval of the rally. That is, as postulated by the theory, belief importance mediated the effect of the emphasis frame on issue attitude. However, the free speech frame did not increase the belief importance of this consideration, although higher cognitive importance of this aspect significantly increased support for the rally. Here, the proposed mediation effect of the free speech frame was not supported. Overall, however, the study showed for the first time that cognitive accessibility did not play a relevant role, but that belief importance change can be a relevant mediator of emphasis framing effects, triggering further studies to investigate this mechanism.

For example, Hartman and Weber (2009) conducted an extended replication of the aforementioned study that dealt with the same issue, manipulating both the emphasis frames and source cues, in other words, which political actor offered the frame to the audience. The interaction effects between source cues and frames explored in this study and what this means for the moderation of emphasis framing effects are elaborated later in **Subchapter 2.4.2**. Here, we focus only on the results on the mediation of the main effect of emphasis frames via belief importance change. As in the study by Nelson, Clawson et al. (1997), Hartman and Weber (2009) did not confirm the mediation of the effects of the free speech frame on participants' support for the rally via belief importance change. However, they also found that the effect of the public order frame was mediated through the increased importance respondents' attached to the consideration of security, which decreased their support for the rally.

In an experiment using possible Turkish membership in the European Union as the issue, de Vreese et al. (2011) investigated belief importance change as a mediator of the effects of emphasis frames on Dutch citizens' support for Turkish membership without considering belief content changes. When exposed to a "cultural threat" emphasis frame highlighting that Turkey's membership would increase Turkish immigration to the Netherlands, through which Christian culture could be undermined by Muslim culture, respondents rated the importance of culture as significantly more relevant, which significantly decreased their support for Turkish membership. In addition, the effect of the "security" frame emphasizing possible consequences of Turkish membership for the security of the Netherlands was significantly mediated via the increased importance of security considerations, which reduced support for membership. However, no significant result was found for the mediation of an "economic" frame of the issue via belief importance changes.

The last study that tested only the indirect effects of emphasis frames via belief importance changes was conducted by Matthes and Schemer (2012). In contrast to the aforementioned studies, this one did not use an experimental setting, but employed a linkage analysis bringing together citizens' actual media usage, the (framed) content of the used media, and citizens' issue attitude toward stricter naturalization processes for immigrants in Switzerland. The results indicated that exposure to a "mass naturalization" emphasis frame stressing that a large number of immigrants would be naturalized increased the importance citizens attached to the consideration of too many foreigners in the country, which increased their support for stricter naturalization processes. However, this mediation effect of the emphasis frame on issue attitude via belief importance change was only significant for citizens with low attitude certainty regarding the issue (again, **Chapter 2.4** explores in depth moderated emphasis framing effects).

While these studies produced much empirical evidence of the relevant role of belief importance change as a mediator of emphasis framing effects on citizens' issue attitude, it is important to briefly discuss how these studies measured belief importance. In fact, all mentioned studies (and the mediation studies discussed below) measured the general

importance of the emphasized frame, i.e., the general importance of the standard of reference suggested by the emphasis frame. While this is not wrong, one can question whether this entirely fits with the effects of emphasis frames on the attitude equation introduced in **Subchapter 2.3.2**. Specifically, the theory by Nelson, Oxley et al. (1997) contends that a frame increases the importance of a very specific belief contained in the attitude equation. For instance, when the belief content is that a new tax on carbon dioxide will reduce the country's emission by 50%, a more rigorous test of belief importance change would be that an environmental frame changes the individual importance of this specific belief (i.e., "it is important that the new tax reduces emissions by 50%") and not the general importance of the frame (i.e., "it is important to protect the environment"). However, as the general importance of the frame is the standard for how studies operationalized belief importance change, this book also adopts this term and its operationalization. Nevertheless, noteworthy is that the measured belief importance changes are, in fact, frame importance changes, not changes in the importance of a single belief as expected when seriously considering the (formalized and idealized) attitude equation.

Despite this small shortcoming, it can still be concluded that emphasis framing effects are mediated via importance changes, which is already strong support for the theory by Nelson, Oxley et al. (1997). However, the studies discussed thus far only looked at belief importance changes as a mediator of emphasis framing effects without controlling for possible simultaneous mediation via belief content changes, which should not occur according to the theory. Fortunately, the studies presented next tested both mediators in competition.

Studies investigating belief importance change and belief content change

Druckman and Nelson (2003) conducted an experiment on a campaign finance reform that aimed to restrict the ability of national parties to collect and spend money contributed by corporations, unions, and individuals to finance their campaigns. Participants were exposed either to a "special interest" emphasis frame describing the reform as necessary in reducing the influence of rich interest groups and other powerful lobbies not acting for the common good, or exposed to a "free speech" frame highlighting that not allowing corporations and unions to finance campaigns violates their right of freedom of expression and representation of their interests. After exposure, the authors measured the importance citizens attached to free speech and to the restriction of the influence of special interests on the government, and their overall attitude toward the reform. They also measured respondents' belief content by asking them whether they believed the campaign finance reform would affect the right of free speech positively or negatively and their beliefs regarding limiting the influence of special interests. A path analysis integrating the measures of belief importance and belief content simultaneously revealed that the emphasis frames affected the importance of free speech and of limiting the influence of special interest, which both influenced participants' support for the campaign finance reform. In contrast, only the free speech frame increased the belief content that the reform would negatively

affect free speech, whereas the belief content about the impact of the reform on limiting the influence of special interests was unaffected by both frames. Moreover, both belief content measures did not influence citizens' overall attitude. That is, the emphasis framing effects were only mediated via belief importance changes, not via a change in the content of beliefs, as postulated by Nelson, Oxley et al. (1997).

Furthermore, the study by Nelson (2004) already described in **Subchapter 2.2.1** investigated both mediators in three experiments. The first experiment dealt with an adoption reform that would allow adopted children to obtain information about their biological parents. This was framed either as a question of "children's rights" or "parents' rights." According to a mediation analysis, the effect of emphasis framing on citizens' issue attitude was fully mediated via belief importance changes, but not via belief content changes. The second experiment focused on affirmative action at universities using "excellence" or "opportunity" frames. Again, the frames did not affect belief content about affirmative action, but did affect the importance of frame-related beliefs that partially mediated the emphasis framing effect on issue attitude. In the third experiment on school vouchers, the attitudinal effect of emphasis frames was as in the first experiment, fully mediated via belief importance change, but not via belief content change. Thus, all three experiments seem to indicate again that only belief importance change, not belief content change, is the decisive mediator of emphasis framing effects.

However, the majority of studies that tested both mediators in competition revealed that emphasis framing effects are also mediated via belief content changes, although belief importance change remained a relevant (partial) mediator of these effects. For instance, Baden (2010) conducted an experiment using two different issues, one dealing with the Euro currency and the other with the enlargement of the European Union. First, he found that the effects of an "identity" emphasis frame and "economy" frame on citizens' issue attitudes were only partially mediated for both issues. Moreover, this partial mediation occurred not only via significant belief importance changes, but also via significant changes in (the valence of) several belief contents.

This simultaneous mediation via belief importance change and belief content change was also found in a study by Nelson and Oxley (1999). As explained in **Subchapter 2.2.1**, this study comprised two experiments. The first experiment was about a land development project in Florida using the emphasis frames "economic benefits" and "environmental threat." The second experiment was about financial cuts in social welfare for children using the frames "threat to children" and "personal responsibility." In both experiments, the emphasis frames significantly changed the importance of citizens' frame-related beliefs and belief contents. Then, both mediators significantly influenced citizens' issue attitude, while the direct effect of the frames disappeared. This means that the framing effect was fully mediated via these two mediators.

Druckman (2001b) also investigated the mediation of emphasis framing effects via belief importance change and belief content change in competition through an experiment on a political proposal dealing with financial aid from the government for the poor.

Participants read either a "humanitarianism" frame or "government expenditure" frame for this issue. The former emphasized the importance of helping the poor, while the latter focused on the financial costs for the government when providing such aid. It was found that the effects of these emphasis frames on citizens' issue attitude were significantly mediated via both changes in the importance of beliefs (e.g., how important it is to care about the well-being of the poor) and in the content of beliefs (e.g., the effect the program would have on the situation of the poor). However, belief importance change was the more prominent mediator, especially when a credible source offered the frame.

In contrast, in a study by Lecheler et al. (2009) dealing with international trade policies perceived in a pretest as a "low-importance issue" in general, belief content change was the more prominent mediator of emphasis framing effects than belief importance change, although the latter also significantly mediated the framing effect on issue attitude. Last, in two independent studies, Igartua and colleagues found that emphasis frames affected the importance of beliefs and belief content in addition to overall attitude. Note though that the authors did not test this in a rigorous mediational approach, but as single dependent variables (Igartua & Cheng, 2009; Igartua, Moral-Toranzo, & Fernández, 2011).

In sum, studies that tested the mediators of belief importance change and belief content change in competition revealed two relevant insights. First, in all studies, belief importance mediated emphasis framing effects when controlling for belief content changes. This consistent result strongly corroborates the theory proposed by Nelson, Oxley et al. (1997) in so far that belief importance is a relevant mediator of emphasis framing effects. Second, however, the majority of studies provided less support for the second assumption of this theory, as changes in belief content also mediated framing effects. That is, belief importance has not been confirmed as the only and exclusive mediator of emphasis framing effects. This speaks for the argument of Chong and Druckman (2007a, 2007b) already presented in **Subchapter 2.3.1**. They proposed that emphasis framing effects not only work via applicability effects (i.e., changes in the importance of frame-related beliefs), but also via availability effects (i.e., added or changed beliefs). However, Slothuus (2008) proposed a theory that explains in a more sophisticated manner *when* emphasis framing effects work via *which* mediational process. This theory is elaborated next.

The moderated mediation of emphasis framing effects via belief importance change and belief content change by citizens' political knowledge

Given the conflicting result that emphasis framing effects can work via changes in the importance of beliefs and in the content of beliefs, Slothuus (2008) offered an explanation of when it is more likely that one of the mediators is the more relevant of these effects. He proposed a moderated mediation process influenced by citizens' prior political knowledge. While *moderation* describes how the effect of an independent variable on a dependent variable is conditioned by another (moderator) variable, which is decisive for the magnitude of the effect, the term *moderated mediation* is used when a moderating variable conditions whether and via which paths (i.e., mediator) an independent variable affects the dependent

variable (Baron & Kenny, 1986). Slothuus (2008) argued that citizens with little political knowledge do not possess enough available considerations to understand emphasis frames through which they are unlikely affected by frames at all. When citizens possess some political knowledge, they are able to understand a frame, but may still not have many available considerations regarding political issues. This makes it more likely that an emphasis frame contains new information for them, which increases the probability that the frame will affect their belief content. Therefore, the effect of an emphasis frame on issue attitude should also be mediated via belief content changes, when citizens have moderate political knowledge. In contrast, citizens possessing much political knowledge generally have more considerations available regarding political issues. For them, it is less likely that an emphasis frame contains new information, which makes it less likely that the frame will change their belief content already established prior to frame exposure. Thus, for them, emphasis framing effects should not work via belief content change. However, such frames should still be able to affect citizens with more political knowledge by changing the importance of their (prior) belief content. Therefore, the relevant mediator of emphasis framing effects should be belief importance change when political knowledge is high.

Slothuus (2008) tested his refined theory in an experimental study that employed the topic of a new bill on social welfare that aimed to cut back welfare benefits for unemployed persons after a period of six months of unemployment (also see **Subchapter 2.2.1**). About a week before the experiment, participants had to answer test questions on their general political knowledge. The experiment exposed respondents to one of the following two frames (or a control group dealing with a different issue). The "poor" emphasis frame highlighted that the new bill would increase the number of poor people in the country, not fight poverty. In contrast, the "job" frame emphasized that the bill would serve as an economic incentive motivating those unemployed to search harder for employment, through which they would find it easier to find a new job.

Testing for the mediation process of emphasis framing effects on citizens' issue attitude without considering their political knowledge indicated that the effects were mediated via both belief importance changes and belief content changes, consistent with the results of other studies testing both mediators in competition (see above). However, examining the mediation processes by level of political knowledge, Slothuus (2008) found as per his prediction that emphasis frames did not affect issue attitude or both mediators for persons with very little political knowledge. When citizens possessed moderate political knowledge, the frames influenced how they judged the belief content that unemployment is one's own responsibility, which affected their issue attitude. In addition, the emphasis frames changed the importance of citizens' beliefs that incentives to work are relevant and that government expenditure should not be too high, which subsequently influenced their overall attitude. That is, for citizens with moderate political knowledge, emphasis framing effects were mediated via both belief content and belief importance changes. In contrast, when citizens possessed high political knowledge, the emphasis frames did not affect their belief content, only the importance of their belief. As such, emphasis framing effects seem

to work differently depending on citizens' political knowledge, and at least when political knowledge is high, the only relevant mediator is belief importance change. Thus, for this subgroup, Slothuus (2008) demonstrated the accuracy of the theory by Nelson, Oxley et al. (1997).

In a further study, Lecheler and de Vreese (2012) tried to replicate the finding of the moderated mediation of emphasis framing effects by citizens' political knowledge. They conducted an experiment dealing with economic development in Bulgaria and Romania, the two newest member states of the European Union when the study took place. The topic was framed for participants either as opportunities for the economic development of the countries or highlighted the potential economic risks. Again, testing the mediational processes underlying the framing effects revealed that both belief importance and belief content changes (partially) mediated the frame effect on issue attitude when tested in competition and without considering citizens' political knowledge. Moreover, the effects via belief content change were significantly stronger than via belief importance change according to a series of contrast tests. Next, Lecheler and de Vreese (2012) tested whether the mediation was moderated by citizens' political knowledge using the levels of low, moderate, and high political knowledge. In contrast to the results in the study by Slothuus (2008), higher knowledge led to a stronger mediation of framing effects via both belief importance change and belief content change.

That is, there is only mixed support for the refined theory proposed by Slothuus (2008) to explain when emphasis framing effects work via which psychological mechanism, and therefore also for the theory of Nelson, Oxley et al. (1997). However, there might be another explanation for why belief content change has been empirically shown to mediate emphasis framing effects in contrast to the expectation claimed in this theory, which states that only belief importance change is a relevant mediator of these effects. To understand this explanation, offered in **Subchapter 2.8.4**, and the empirical test thereof in **Chapter 5.2**, many other relevant aspects of emphasis framing effects are first clarified in the next chapters. First, **Subchapter 2.3.4** summarizes what studies have thus far revealed regarding the mediating cognitive mechanisms of emphasis framing effects.

2.3.4 Summary and implications for citizens' rationality in attitude formation

The previous three subchapters clarified that no clear consensus exists in the literature on the cognitive mechanisms that mediate the effects of emphasis frames on citizens' issue attitude. Some authors expected that the higher salience of an emphasis frame in a message would increase the cognitive accessibility of this frame in citizens' working memory, and that citizens base their attitude on the issue perspective with higher temporary cognitive accessibility (e.g., McCombs & Ghanem, 2001). Other authors criticize this expectation as being too close to the mechanisms explaining priming and (second level) agenda setting from which the mechanisms of framing should differ (e.g., Cacciatore et al., 2016; Price, Tewksbury, & Powers, 1997; D. A. Scheufele, 2000; D. A. Scheufele & Tewksbury, 2007).

In their view, emphasis frames increase the applicability of certain frame-related considerations, i.e., emphasis frames build a cognitive connection between the issue and the frame, and increase the perceived appropriateness of this frame in interpreting the issue. Other authors believe that emphasis frames can also add and change the availability of certain beliefs (Chong & Druckman, 2007a, 2007b). Moreover, these authors stress there is not one unique mediator of emphasis framing effects; rather availability, accessibility, and applicability are complementary psychological processes underlying these effects (e.g., Baden & Lecheler, 2012; Chong & Druckman, 2007b). In contrast, some scholars propose applicability as a unique mediator of emphasis framing effects, and that such frames only increase the applicability of a particular component of an issue attitude, namely changes in the importance of frame-related beliefs (e.g., Nelson, Clawson et al., 1997; Nelson, Oxley et al., 1997).

Empirical studies on these concurring theoretical ideas provide only limited evidence that emphasis framing effects are mediated via simple changes in the temporary cognitive accessibility of a frame. (For an overview of all empirical results regarding mediating processes, see **Table 1**.) In contrast, the applicability-based mechanism of belief importance changes has been shown to mediate the effects of emphasis frames in all empirical studies testing this mediator (again, see **Table 1**). However, unlike that proposed by Nelson, Oxley et al. (1997), most of these studies revealed that belief content changes also mediated the frame effect, i.e., that emphasis frames also added and/or changed available beliefs (see **Table 1**). Based on these empirical findings, it can be concluded first that emphasis framing effects can be explained by affecting cognitive processes, and second, that belief importance change and belief content change are the most relevant cognitive mechanisms underlying emphasis framing effects. However, the second is preliminary, as a theoretically problematic reason may exist for why emphasis frames also affect belief contents and not only their importance. This is discussed later when responding to recent criticism on the emphasis framing approach (see **Subchapter 2.8.4**).

Table 1. Summary of empirical results for the cognitive mediators underlying emphasis framing effects on citizens' issue attitude

Outcome	Test procedure	Study
No accessibility change	Mediation tested in competition with belief importance change (applicability)	Nelson, Clawson et al. (1997)
Belief importance change (applicability)	Mediation tested alone	de Vreese et al. (2011); Hartman and Weber (2009); Matthes and Schemer (2012)
Belief importance change (applicability)	Mediation tested in competition with accessibility	Nelson, Clawson et al. (1997)
Belief importance change (applicability)	Mediation tested in competition to belief content change (availability)	Druckman and Nelson (2003); Nelson (2004)
Belief importance change (applicability) and belief content change (availability)	Not tested as mediation but as single dependent variables	Igartua and Cheng (2009); Igartua et al. (2011)
Belief importance change (applicability) and belief content change (availability)	Mediation tested in competition with each other	Baden (2010); Druckman (2001b); Lecheler et al. (2009); Nelson and Oxley (1999)
Belief importance change (applicability) and belief content change (availability) moderated by political knowledge (high knowledge via belief importance, low knowledge via belief content)	Moderated mediation tested in competition with each other and by political knowledge	Slothuus (2008)
Belief importance change (applicability) and belief content change (availability) moderated by political knowledge (both paths generally stronger for high knowledge, but both paths also significant for low knowledge)	Moderated mediation tested in competition with each other and by political knowledge	Lecheler and de Vreese (2012)

Last, the empirical results in the literature for mediational processes are potentially consequential for assessing citizens' rationality in attitude formation. First, emphasis framing effects do not seem to work via simple changes in temporary cognitive accessibility, implying that these effects do not work fully unconsciously or without any reasoning. That is, framing effects do not take advantage of citizens as "cognitive misers" (Fiske & Taylor, 1991) who base their attitude on whatever emphasis frame is top of mind, which would otherwise be the clearest indicator for irrational and unsubstantiated attitude formation because of framing. Second, as emphasis framing effects also work via adding and changing the availability and content of beliefs, one could interpret framing effects not as the irrational result of basing one's attitude on the salience of a frame, but as the rational result of learning based on new information contained in the frame (cf. Chong & Druckman, 2007b). Third, even the changed importance of beliefs could indicate that emphasis framing effects are less irrational, as citizens seem to have a reason they follow the valence of the emphasis frame in their attitude formation.

Thus, it seems the mediation processes underlying emphasis framing effects suggest that attitudinal differences based on exposure to different emphasis frames are not irrational. However, in particular, belief importance changes could also indicate a form of seeming rationality that is actually irrational, because citizens may simply attach higher cognitive importance to any frame more salient, i.e., their reasoning switches unreasonably depending on the frame. Thus far, it is too early to draw any final conclusions regarding this, as a fundamental problem of the presented studies has not yet been discussed (see **Subchapter 2.8.4**). Furthermore, new empirical results on the mediators without this problem must still be presented (see **Chapter 5.2**). Before that, this book continues by examining potential moderators of emphasis framing effects in the next **Chapter 2.4**. This chapter questions much more seriously the preliminary conclusion that emphasis frames lead to irrational attitude formation provided in **Subchapter 2.2.2**, which was based solely on the results for simple emphasis framing effects in **Subchapter 2.2.1**.

2.4 Moderators of emphasis framing effects

2.4.1 Empirical results for moderators at the individual level

To better understand how effective emphasis framing effects work for different citizens and contexts, it is important to investigate whether these effects work uniformly or depend on other variables. Put differently, to assess the strength of emphasis framing effects, one must answer the question of whether these effects are *moderated* or not. Moderating variables are third variables that influence the magnitude (and sometimes even the direction) of the effect of an independent variable on the dependent variable (Baron & Kenny, 1986). Such moderators can affect the relation between an independent variable and a dependent variable in various ways.

First, moderators can simply have no influence, and the effect of an independent variable on a dependent variable is entirely independent of the moderator, i.e., the effect does not vary by the level of a moderator variable. For example, exposure to a highly compelling political fact might always influence citizens' issue attitude in the direction of the fact, and the magnitude of this effect is the same regardless of whether a person likes or dislikes the politician who mentioned the fact. Second, the effect of an independent on a dependent variable can be stronger when the moderator variable has a specific level than when it has a different level. For instance, a compelling fact might always influence an issue attitude in the direction of the fact. However, this effect might be stronger when the source mentioning the fact is a credible speaker than when the speaker is less credible. Third, the level of a moderator variable can be decisive regarding whether an effect occurs at all, and the effect of an independent variable on a dependent variable is only present when the moderator is at a certain level, but there is no effect when the moderator variable is at a different level. For example, a moderately compelling fact might only influence issue attitude in the direction of the fact when aligned with a person's prior political values but might have no effect when it is not aligned with prior values. Fourth, the effect of an independent variable on a dependent variable can point to conflicting directions depending on the level of a moderator variable. For instance, a weakly compelling fact might affect issue attitude in the direction of the fact when the fact matches prior political values. However, when the same weakly compelling fact counters a person's prior values, this might lead to an attitude against the direction of the fact (i.e., a contrast effect). As these brief examples illustrate, investigating moderators enables specifying phenomena of effects, providing a more fine-grained answer regarding how total and unlimited an effect is across various additional conditions.

Thus, in empirical research on emphasis framing effects, the question of moderated effects has received considerable attention (cf. Borah, 2011a; Chong & Druckman, 2007b; de Vreese & Lecheler, 2012; Lecheler & de Vreese, 2018). Following de Vreese and Lecheler (2012), two different types of moderating variables can be broadly distinguished in the literature on emphasis framing effects. On one hand, studies investigated the influence of moderators located at the *level of the context*. These studies explored the influence of other message features on the effects of simple emphasis frames, such as whether emphasis framing effects work the same for different issues (e.g., Lecheler et al., 2009), when they are accompanied with different partisan source cues about the speaker mentioning the frame (e.g., Hartman & Weber, 2009), when the speaker is credible or less credible (e.g., Druckman, 2001b), or when citizens are exposed to the simultaneous presentation of competing emphasis frames in the same message (e.g., Sniderman & Theriault, 2004).

On the other hand, empirical research has also tested the moderating influences of variables located at the *level of the individual*, i.e., whether characteristics of the individual exposed to an emphasis frame condition the effects of these frames. Examples here include whether emphasis framing effects exert uniform effects regardless of whether persons are

generally open-minded or not (Nisbet et al., 2013), possess a high or low need to evaluate (Druckman & Nelson, 2003), have different levels of political knowledge (Lecheler & de Vreese, 2012), or share or do not share the political value highlighted by an emphasis frame (e.g., Shen & Edwards, 2005). This subchapter focuses on the latter, the individual-level moderators, while **Subchapter 2.4.2** discusses empirical results regarding the contextual moderators of emphasis framing effects. However, important is that the presentation of moderators is limited to empirical studies that investigated emphasis framing effects as defined in **Subchapter 2.1.2**, i.e., (moderated) effects of political emphasis frames on citizens' issue attitudes. In addition, this chapter focuses only on the moderators relevant for conditioning emphasis framing effects at a single point in time (t_1). Further moderators relevant for framing effects over time are introduced in **Chapter 2.6**.

Personality variables as individual-level moderators of emphasis framing effects

Regarding individual-level moderators (at t_1), *personality variables* and *political variables* can be further differentiated. Three personality variables have been analyzed as possible moderators of emphasis framing effects. First, Druckman and Nelson (2003) investigated whether citizens' *need to evaluate* moderates emphasis framing effects. The need to evaluate is a psychological trait variable and describes a person's stable and general tendency to engage constantly across issues and situations in the psychological evaluation of objects (Jarvis & Petty, 1996). This need differs between individuals, and while some permanently evaluate their (social and physical) surroundings, others have a lower tendency to engage in constant evaluation. As persons with a higher need to evaluate constantly rate objects of all kinds, they tend to have more attitudes than do citizens with a lower need to evaluate (Bizer et al., 2004). Thus, according to Druckman and Nelson (2003), individuals with a high need to evaluate are more likely to have an attitude toward the issue prior to exposure to an emphasis frame highlighting a certain aspect of this issue. In turn, this prior attitude weakens the influence of a single exposure to an emphasis frame on issue attitude, as the frame has to compete against an already formed attitude. Thus, the authors contend that emphasis framing effects are stronger when citizens' need to evaluate is low compared to when it is high.

To test this contention, Druckman and Nelson (2003) conducted the experiment already described in **Subchapter 2.3.3**, which dealt with a campaign finance reform and exposed participants to either a "free speech" or "special interests" emphasis frame. Depending on the exposure, participants formed significantly different issue attitudes. When integrating citizens' need to evaluate as a moderator of this emphasis framing effect, the results showed a significant interaction between the framing condition and need to evaluate. Specifically, the framing effect was stronger for individuals with a low need to evaluate than those with a high need to evaluate, underlining the theoretical expectations of Druckman and Nelson (2003). Hence, this study offers initial insights that emphasis framing effects do not work uniformly for different individuals, but are moderated by citizens' need to evaluate. However, a high need to evaluate did not prevent a frame effect.

That is, even though the study demonstrated a moderation effect, the emphasis framing effect did not rely exclusively on a specific degree of citizens' need to evaluate, but also had a general attitudinal effect.

Second, Tewksbury et al. (2000) tested whether citizens' *need for cognition* moderates emphasis framing effects. Like the need to evaluate, need for cognition is a personal trait variable that differs between individuals but describes how much persons engage in and enjoy thinking (Cacioppo & Petty, 1982). The authors expected that the emphasis framing effect found in their experimental study on large-scale hog farms framed in various ways would be less pronounced for citizens with a high need for cognition than for those with a low need for cognition. The reasoning was that individuals with a high need for cognition elaborate messages more deeply and are thus "less willing to accept the first frame they encounter" (Tewksbury et al., 2000, p. 810). However, the results showed no moderation effect, and the strength of the existing emphasis framing effect did not differ across the levels of need for cognition. Thus, the study rather suggests that emphasis framing effects work uniformly across individuals.

Third, Nisbet et al. (2013) analyzed *open-/closed-mindedness* as a potential moderator of emphasis framing effects. This variable is a sub-dimension of the personality trait need for cognitive closure (Kruglanski, Webster, & Klem, 1993; Webster & Kruglanski, 1994). It indicates how strongly a person tends to consult different opinions of an issue and tries to understand why different sides could be right. On one side of this dimension, closed-minded individuals tend to avoid different viewpoints on an issue and are unwilling to deal with alternative or inconsistent evidence. On the other side, open-minded persons show a strong motivation to consider and weight different information. Thus, the authors expected that emphasis framing effects in an experiment on the topic of mitigation policies for climate change (for which prior opinions tend to be crystallized before frame exposure) would be more likely to affect open-minded citizens, whereas closed-minded individuals would be unlikely to change their attitude based on emphasis frames.

The results of this experiment first revealed no main effect of emphasis frames and that it made no difference whether the policy on climate change mitigation was framed as a policy to prevent "environmental disaster," as a policy that enhances "national security" because of increased independence from oil-producing countries, or as a policy with "economic costs" that are too high. Moreover, open-mindedness did also not boost the (insignificant) emphasis framing effect. However, when participants were exposed to different emphasis frames in simultaneous competition, not to only one frame (for a longer discussion on the influence of frame competition on emphasis framing effects, see next **Subchapter 2.4.2**), open-/closed-mindedness moderated the framing effect. While no main effect of frames presented in competition was found, the environmental disaster emphasis frame affected open-minded participants more than it did a control group without frame exposure, even when the economic costs counter-frame accompanied the environmental frame. In contrast, again, no emphasis framing effect emerged for closed-minded citizens. That is, the study by Nisbet et al. (2013) suggests that emphasis framing

effects can be more complex and only work when additional conditions are met, such as that citizens are open-minded to change their attitude based on exposure to emphasis frames.

Political variables as individual-level moderators of emphasis framing effects

Besides the aforementioned personality variables, empirical studies have also investigated whether individual-level political variables moderate emphasis framing effects. Among these variables, citizens' *political knowledge* (i.e., how much a person knows about politics) has received much attention. Not less than ten empirical studies have tested the moderating influence of this variable. These studies can be divided into two different camps proposing (and finding) contradicting influences of political knowledge on the framing effect. One camp proposes that emphasis framing effects tend to be stronger when citizens' political knowledge is low, because such persons demonstrate a) a lower probability to have already established prior opinions that can otherwise dampen framing effects and b) a higher probability that an emphasis frame provides new information on an issue. Thus, such persons are more likely to accommodate their attitude based on the new information (e.g., Beattie & Milojevich, 2017; Bechtel et al., 2015; Haider-Markel & Joslyn, 2001; Schuck & de Vreese, 2006). In contrast, the other camp proposes that the effects of emphasis frames are more pronounced when a person has more political knowledge, as this increases the likelihood that they understand these emphasis frames and can integrate the salience thereof in their attitude formation (e.g., de Vreese et al., 2011; Lecheler & de Vreese, 2012; Nelson, Oxley et al., 1997; Slothuus, 2008). Both hypotheses are empirically support.

First, regarding studies showing that less political knowledge increases the strength of emphasis framing effects, the results of a study by Bechtel et al. (2015) revealed that these effects (sometimes accompanied by partisan source cues, see next **Subchapter 2.4.2**) only occurred when citizens possessed lower knowledge. Specifically, the emphasis frames "crime reduction" and "humanitarianism" for the issue of an initiative calling for the deportation of criminal foreigners demonstrated no attitudinal effects on average across all participants, and only affected respondents who were less knowledgeable. Haider-Markel and Joslyn (2001) tested the moderating influence of political knowledge in their experiment on the emphasis framing of a new handgun law. They exposed participants to either a "public safety" or "civil rights" emphasis frame. In contrast to the aforementioned study, the authors found a main effect of emphasis frames. However, examining this effect by political knowledge, the effect was conditioned by the level of political knowledge and only occurred when respondents' knowledge was low.

The same pattern was observed by Schuck and de Vreese (2006) in an experimental study on public support for the enlargement of the European Union, which was framed either as an opportunity to spread democratic values across the continent or as a risk of importing problems of new member states to old ones. Again, the authors found a significant main effect of emphasis framing. However, when decomposing this effect by political knowledge, the frame effect was limited to participants with low knowledge. The

last study that seems to empirically support the idea of stronger emphasis framing effects when political knowledge is low was conducted by Beattie and Milojevich (2017). In their experiment on the military conflict between the Ukraine and Russian-speaking separatists, the authors employed four different emphasis frames. When respondents were exposed to one of these frames, three of the four emphasis frames significantly shifted participants' opinions regarding the conflict. However, knowledge "had a weak dampening effect on opinion change" (Beattie & Milojevich, 2017, p. 15). In other words, the emphasis framing effects were more pronounced when respondents' political knowledge was low.

Despite that these studies suggest that the moderation of emphasis framing effects takes place in the form of stronger framing effects when citizens have lower political knowledge, a similar number of empirical studies reveal exactly the opposite, namely that the effects are stronger when knowledge is high. For example, de Vreese et al. (2011) analyzed in their experiment on Turkish membership in the European Union (also see **Subchapter 2.3.3**) whether political knowledge moderated the found main effect of the five different emphasis frames they manipulated. For some single frame effects, political knowledge did not condition the effectiveness of the frame, and the frames equally strongly affected respondents with low and a high political knowledge. For other frames, knowledge moderated the frame effect, but the emphasis frames influenced more strongly those with more politically awareness, not the less politically sophisticated as in the studies described above. For generally compelling emphasis frames exerting a main effect on citizens' issue attitude, an experimental study by Chong and Druckman (2007a) dealing with an urban growth project also showed that the effects of some frames were stronger when participants' political knowledge was high. However, when examining other compelling frames, the significant emphasis framing effect did not differ by respondents' political knowledge.

A comparable result was obtained in the previously mentioned study by Lecheler and de Vreese (2012), who investigated emphasis framing effects for the issue of the enlargement of the European Union (see **Subchapter 2.3.3**). Again, they first found a general main effect of frame manipulation. Decomposing this effect by participants' political knowledge, the results indicated that the emphasis framing effect was present for respondents with low, moderate, and high political knowledge. However, the size of the effect increased as political knowledge increased, and participants with more knowledge were more affected than those with moderate knowledge, who were more susceptible to emphasis framing effects than those with low political knowledge.

Likewise, Slothuus (2008) showed in his experimental study, already described in **Subchapter 2.2.1**, that emphasis frames had a general main effect on citizens' issue attitude. However, investigating this effect by political knowledge, the frames did not influence those with the lowest political knowledge. In contrast, exposure to different emphasis frames only affected participants with moderate or high political knowledge. That is, while the two studies before found that emphasis frames affected citizens with lower political knowledge less strongly but still significantly, the study by Slothuus (2008) suggests that having at least

moderate political knowledge is a necessary condition for the effectiveness of emphasis frames. This result is corroborated by Nelson, Oxley et al. (1997), who in their experiment on social welfare attitudes found no main effect of emphasis frames, but only an interaction effect between frames and citizens' prior attitudes when respondents possessed sufficient knowledge about this political topic. The frame emphasis could not encourage participants to form a significantly different attitude when they had only limited knowledge.

Based on the presented results for political knowledge as a moderator of emphasis framing effects, it can be concluded that the exact role of this moderator remains unclear, except regarding the fact that political knowledge moderates somehow the framing effect. However, Druckman and Nelson (2003) offer a compelling reason for why studies found that political knowledge sometimes increases and other times decreases the effectiveness of emphasis frames. The authors explain these contradictory findings through the problem of confounded measurements of citizens' political knowledge. They argue that measures of political knowledge are often correlated with the strength of citizens' prior opinions on an issue. Bechtel et al. (2015) and Haider-Markel and Joslyn (2001) also note that when someone has high political knowledge, this person will also more likely have more established political attitudes, which can dampen emphasis framing effects. Hence, Druckman and Nelson (2003) assumed that the "true" influence of political knowledge can only be observed when controlling for the existence of prior attitudes. When controlling for prior attitude strength, higher knowledge should reinforce emphasis framing effects, as higher knowledge contributes to better understanding the relevance of a certain consideration emphasized by a frame.

To test this assumption, the authors measured in their experiment on a campaign finance reform (see above) participants' political knowledge and need to evaluate, the latter as a proxy for prior opinions. They then integrated both variables as moderators in a multivariate regression model testing for the found main effect of emphasis frames. The results revealed that controlling the need to evaluate led to the expected moderating influence of political knowledge, and the emphasis framing effect was stronger when political knowledge was high than when it was low. However, even though this is a compelling explanation for why other studies on the moderating influence of political knowledge revealed contradictory findings, the study by Druckman and Nelson (2003) has thus for not been replicated. Thus, it is unclear whether the explanation holds true. Therefore, based on all results on political knowledge as an individual-moderator of emphasis framing effects, it is concluded that the exact role of this moderator remains unclear, despite the fact that political knowledge is a moderator that sometimes decreases (or even inhibits) and other times increases the effectiveness of emphasis frames.

However, political knowledge is not the only individual-level political variable tested as a moderator of emphasis framing effects. For instance, Shen (2004b) analyzed the moderating influence of a close relative of political knowledge: citizens' *issue schemas*. Such schemas are specific cognitive structures representing knowledge about an issue or type of stimulus (Fiske & Taylor, 1991), and as such, are sometimes also referred to as "frames in

thought" (Druckman, 2001a). Issue schemas guide information processing and according to Shen (2004b) emphasis frames are more effective when they match citizens' issue schemas, because they resonate more strongly with the organizing cognitive frameworks already established in a person's memory. However, in both of his experiments (see **Subchapter 2.2.1** for more detail on the experimental setting), the author only found the moderating influence of participants' issue schemas on their issue thoughts. For instance, when exposed to an ethical frame for the issue of stem cell research, respondents with ethical issue schemas were more likely to express ethical thoughts regarding the issue than those with stronger medical benefit issue schemas. For citizens' issue attitude, Shen (2004b) only found two independent main effects of emphasis frames and of respondents' issue schemas, but no interaction between both variables. That is, while persons with ethical issue schemas were generally more likely to oppose stem cell research, an ethical frame did not affect these participants more strongly than those with issue schemas focusing on medical benefits. Essentially, the emphasis framing effect was not moderated by certain individual issue schemas, but the frames exerted a uniform attitudinal effect across various levels of participants' issue schemas.

This uniform emphasis framing effect across different individuals was also found in an experiment by Lecheler et al. (2009). The authors tested whether perceived personal *issue importance* moderates the framing effect, which they tested for a political issue perceived on aggregate as less important, but that still produced sufficient variance between individuals who judged the personal importance of this (generally low-importance) issue as either high or low. The issue pertained to international trade agreements, and the experiment exposed participants to either an economic benefits of trade agreements emphasis frame or one highlighting the economic costs of trade agreements. The authors expected emphasis framing effects to be stronger when persons judge the political issue as personally less important, because in such cases, citizens have less available prior attitudes to the issue and less knowledge about it that could otherwise dampen frame effects. However, while the results revealed that respondents formed significantly different issue attitudes depending on frame exposure, personal issue importance did not moderate this effect. The strength of the emphasis framing effect was the same for persons who judged the issue as important and those who did not.

Another moderator examined empirically is citizens' *partisanship*, i.e., whether emphasis framing effects differ by party preference. For instance, in two experiments, Haider-Markel and Joslyn (2001) investigated whether emphasis frames are only effective when highlighting issue aspects that match the general views of supporters of a specific party, whereas the frames often employed by oppositional parties would be ineffective, as they draw on considerations less applicable to the individual. In the first experiment, respondents were exposed to the issue of a new handgun law framed in terms of either "civil rights" or "public safety" (also see above). While they found a main effect of frame exposure on participants' issue attitude, decomposing this effect by respondents' partisanship revealed that Democrat supporters were not affected by the frames and

strongly opposed the carrying of concealed guns, regardless of the frame. In contrast, the civil rights frame significantly increased Republican supporters' support for this policy than did the public safety emphasis frame, because the civil rights frame resonated better with the general views of Republican voters. That is, a specific partisanship was a necessary condition for the effectiveness of emphasis frames (even though parties were not mentioned as the sources of the frames, but see next **Subchapter 2.4.2** for partisan source cues as a moderator of emphasis framing effects). Moreover, Haider-Markel and Joslyn (2001) replicated this moderating influence in their second experiment, in which they also first found a main effect of emphasis frames. Compared to the control group, the frame "blame guns" for the topic of school shootings affected supporters of the Democratic Party but not those favoring the Republicans. In contrast, Republican supporters were susceptible to the frame "blame violence in the media," whereas this frame was ineffective for Democrat voters.

In addition, Bechtel et al. (2015) analyzed the moderating influence of partisanship in their experiment, mentioned earlier. They did not find a general emphasis framing effect. However, the "humanitarianism" emphasis frame affected those who identified with the Swiss Social Democratic Party (SP) more than the control group without frames. In contrast, neither the humanitarianism nor the "crime reduction" emphasis frames influenced Swiss People's Party (SVP) supporters. Thus, the results for the moderating influence of partisanship suggest that emphasis framing effects mainly occur when they employ issue aspects that match partisan views, but that such frames are rather ineffective when deviating from these views. This undoubtedly questions the general persuasive strength of emphasis framing effects (see **Subchapter 2.4.3** for a longer discussion on the implications of moderated emphasis framing effects).

Another moderator variable related to partisanship seems to condition emphasis framing effects, namely citizens' *political value preferences*. As political values play an extraordinary role in the construction of emphasis frames and as a moderator of emphasis framing effects, the entire **Chapter 2.5** focuses in detail on this variable. It is only mentioned here as a further moderator for completeness. Before delving into political values more extensively, a summary on the presented individual-level moderators follows. In addition, the next subchapters examine moderators on the contextual level (see **Subchapter 2.4.2**) and discuss the implications of moderated emphasis framing effects for assessing citizens' rationality in attitude formation under framing conditions (see **Subchapter 2.4.3**).

Summary

This subchapter showed that emphasis framing effects tend to be more complex than implied by initial studies on simple emphasis framing effects (see **Chapter 2.2**). These effects can differ between individuals, and emphasis frames do often not have uniform effects for all citizens. While some empirical studies revealed that individual-level variables such as need for cognition, personal issue importance, or issue schemas do not moderate

emphasis framing effects, the majority of studies displayed that framing effects differ by individual variables such as need to evaluate, open-/closed-mindedness, political knowledge, political values, and partisanship. Moreover, these variables do not only decrease or increase the strength of emphasis framing effects but, sometimes, specific levels of these variables are necessary conditions in order that an emphasis frame can exert attitudinal effects at all. For instance, emphasis framing effects seem not to work when they employ frames that stand in stark contrast to a person's party identification. However, the exact role of these moderating influences is not always clear, because many of the moderation effects found have yet to be replicated or because replication studies provided contradicting empirical findings for the same moderator variable, especially citizens' political knowledge. Thus, it can be concluded that individual-level moderators play a relevant role in emphasis framing effects even though the exact moderation influences are not always clear. The next **Subchapter 2.4.2** expands the review of moderator variables by examining them at the contextual level.

2.4.2 Empirical results for moderators at the contextual level

In addition to the individual-level moderators discussed in **Subchapter 2.4.1** before, empirical studies have also examined whether *contextual factors* moderate emphasis framing effects. These studies investigated whether other factors surrounding an emphasis frame in a political message strengthen or dampen the effectiveness of a single emphasis frame. Broadly, two different types of contextual moderators can be distinguished. First, studies examined the contextual factors of *issues and cues*, which are not frames, but additional aspects of a message. For instance, studies tested whether emphasis frames work uniformly for political issues of varying relevance (e.g., Lecheler et al., 2009), whether the credibility of an explicitly mentioned source of an emphasis frame conditions its effectiveness (e.g., Druckman, 2001b), or if it makes a difference which political party endorses a certain emphasis frame (e.g., Slothuus & de Vreese, 2010). Second, empirical research investigated whether *simultaneous frame competition* moderates the effects of a specific emphasis frame (e.g., Beattie & Milojevich, 2017; Chong & Druckman, 2007a; Sniderman & Theriault, 2004). These studies exposed citizens not only to one emphasis frame and compared its effectiveness with citizens exposed to another frame with the opposite valence, as did research on simple emphasis framing effects (see **Subchapter 2.2.1**). In contrast, these moderator studies (also) presented two competing emphasis frames at the same time and tested whether this simultaneous competition moderates the effects of each single frame. This subchapter describes the results for both types of contextual moderators. However, as in **Subchapter 2.4.1**, the presentation is limited to empirical studies that investigated citizens' issue attitude as the central dependent variable and moderated emphasis framing effects at a specific point in time. Moderated emphasis framing effects over time are described in **Chapter 2.6**.

Issues and group cues as contextual moderators of emphasis framing effects

One often-discussed question in research on emphasis framing effects is whether these effects are invariant to the framed political issue. While **Subchapter 2.2.1** on simple emphasis framing effects provided evidence for framing effects for various topics, some scholars argue that (experimental) research tends to examine such effects for less relevant issues and thus overstate the strength thereof for salient and contested political issues in society (e.g., Bechtel et al., 2015). However, some studies on simple emphasis framing effects dealt with highly important and contested political topics such as stem cell research (Shen, 2004b), military interventions (Berinsky & Kinder, 2006), affirmative action (Nelson, 2004), enlargement of the European Union (de Vreese et al., 2011), or social welfare (Slothuus, 2008), which to some extent limits the generality of this criticism. Nevertheless, most studies on emphasis framing effects only investigated one political topic, and did not explicitly test whether the *general importance of an issue* moderates the frame effect.

The only study that formally tested this moderator was by Lecheler et al. (2009), partly described in **Subchapter 2.4.1** before. Besides the aforementioned investigation of personal issue importance as an individual-level moderator, the authors also examined the general issue importance in society and tested emphasis framing effects for a high-importance issue and a low-importance issue. The differentiation between high- and low-importance issues thus differs from the degrees in personal issue importance. This is because it does not ask how important a single individual perceives a certain political topic to be, but distinguishes between low- and high-importance issues based on the average response of all individuals to the question of the importance of an issue. In other words, a high-importance issue is one that most people judge as important, and personal issue importance for this high-importance issue can still differ between individuals (cf. Lecheler et al., 2009).

Based on participants' average response to how personally important an issue is, Lecheler et al. (2009) identified the issue of privatization of care for the elderly as a high-importance issue and that of international trade as a low-importance issue. In an experimental setting, the authors randomly assigned respondents to one of these topics framed in one of two ways. For the high-importance issue of privatization of care services, participants were exposed to either an emphasis frame highlighting the expected economic benefits of privatization for municipalities' budget or a frame that emphasized a possible decrease in the quality of care after the privatization of care services. The emphasis frames for the low-importance issue of international trade dealt either with the economic benefits of trade agreements or the economic costs thereof. The authors expected that these frames only influence participants' issue attitudes for the low-importance issue, for which participants should possess fewer (and weaker) prior attitudes than for the high-importance issue. The results confirmed this and that the emphasis frames were only effective for the low-importance issue, but indicated no framing effect for the high-importance issue. As such, this study showed that the general importance of an issue moderates emphasis framing effects, and that low-importance issues can be a necessary condition for the

occurrence of these effects. However, even though this study did not find emphasis framing effects for important and contested issues, it is unclear how relevant this moderator is, as only this research explicitly tested general issue importance as a moderator. Moreover, the other studies mentioned above revealed emphasis framing effects for issues that seem important, although these studies did not measure issue importance.

Closely related to the question of whether emphasis framing effects work uniformly across issues of differing importance, another aspect of issues tested as a moderator of emphasis framing effects deals with differently stereotyped groups related to an issue. Igartua and colleagues (2009; 2011) investigated whether the mentioning of different *group cues* within the topic of immigration influenced the strength of emphasis framing effects for this topic. The authors assumed that citizens possess valenced stereotypes toward certain social groups and that framing effects are more pronounced when the valence of additional group cues matches that of the emphasis frame. For instance, a positively valenced emphasis frame for an issue is more effective when the message contains a cue about a social group for which the majority of citizens possess positively valenced stereotypes.

The authors tested this expectation with two nearly similar experimental studies (cf. Igartua et al., 2011; Igartua & Cheng, 2009) offering replicated insights into this question using two different samples of Spaniards. Both experiments manipulated the same two message factors in the same manner. First, the authors manipulated the framing of a news story dealing with immigration to Spain by exposing participants to either a "crime" emphasis frame highlighting increased crime due to immigration or to the positively valenced "economic benefits" frame, which emphasized the financial contribution of immigrants to the national social welfare system. Second, the experiments manipulated group cues, namely which group of immigrants the news stories mentioned as an example of immigrating groups by labeling them as Latin American or Moroccan immigrants. According to the authors and based on the results of other surveys, Spaniards have more favorable (i.e., positively valenced) stereotypes of Latin American immigrants, and more negatively valenced stereotypes of Moroccan immigrants.

The results of both experiments revealed a significant main effect of the factor emphasis frame on issue attitude. Respondents supported immigration significantly more strongly when exposed to the economic benefits frame than to the crime frame. In addition, the first experiment demonstrated a significant interaction between framing and group cues, indicating that group cues moderated the strength of emphasis framing effects. Specifically, the emphasis frames only had an effect for the positively valenced group cue of Latin American immigrants, but none for the negatively stereotyped Moroccan immigrant group. Against the authors' expectation (and interpretation of the results), a simple effect analysis revealed that the reason for this differential framing effect on issue attitude was not the match between frame valence and stereotype valence.

In fact, the opposite was the case. It was not the negatively valenced frame with the cue of Moroccan immigrants or the positively valenced frame with Latin American immigrants that differed from the other combinations of frames and cues, which would

both otherwise indicate that the match between valences is decisive. In contrast, only one combination of frames and group cues differed from all other conditions: the negatively valenced crime frame decreased support for immigration only when the positively valenced group cue of Latin American was present. That is, valence matching did moderate the emphasis framing effect; rather, the negatively valenced emphasis frame changed the influence of the positively valenced stereotype in the direction of the frame (see the simple effects in Igartua & Cheng, 2009, p. 740). However, the second experiment revealed no significant interaction between frames and group cues on issue attitude (cf. Igartua et al., 2011). This implies that the moderating influence of group cues on the emphasis framing effect could not be replicated, although the main effect of emphasis frames was significant again. Thus, it is empirically unclear how relevant such group cues are as contextual moderators of emphasis framing effects.

(Partisan) Source cues as contextual moderators of emphasis framing effects

Another contextual moderator dealing with cues as a further message characteristic is the credibility of the source presenting the frame in a message. Since the beginning of persuasion research, *source credibility* has been found to influence the effectiveness of political messages (e.g., Hovland & Weiss, 1951), and Druckman (2001b) tested whether less credible sources also dampen the effects of emphasis frames. The basic idea behind source credibility is that speakers can differ in how knowledgeable and trustworthy the audience perceives them to be, and the more credible a speaker is perceived as being, the higher is the probability that the audience follows their evaluations of certain attitude objects the speaker proposes. Put differently, messages by credible sources tend to have a greater persuasive influence than those by less credible sources. For this mechanism to take place, the source of a message or statement must typically be visible for the audience. That is, the effect of credibility often depends on explicit source cues that show who made a certain statement (e.g., "Economic scientists support offshore drilling because of its economic benefits"). Druckman (2001b) expected that emphasis frames only have attitudinal effects when the audience perceives the source that promotes a frame as credible, whereas emphasis frames mentioned by less credible sources are ineffective.

He tested this assumption using two experiments. The first dealt with financial spending for the poor by the government. Participants received either an "expenditures" emphasis frame highlighting that more spending on the poor would cost the government's budget more money, or a "humanitarianism" frame, which emphasized the importance of financially helping the poor. As a second factor, the experiment manipulated whether the framed stimuli appeared as originating from the personal website of Collin Powell or Jerry Springer. According to a pretest, Collin Powell was judged as more credible than Jerry Springer; thus, the former represents a credible source and the latter a less credible source cue. In the second experiment using a fresh sample, respondents were exposed either to the "public safety" or "free speech" emphasis frame, each highlighting different aspects of the same issue of a planned rally by an extremist group. To manipulate the source credibility

of the differently framed messages, participants read constructed and framed news articles that seemed to have been published by either the New York Times – judged as highly credible in a pretest – or the National Enquirer, perceived as a less credible source in the pretest.

For both experiments, the results revealed clear effects of emphasis frames on respondents' issue attitudes when the source was credible (i.e., Collin Powell or the New York Times). In contrast, exposure to different emphasis frames did not yield attitudinal differences when the frames seemed to originate from less credible sources (i.e., Jerry Springer or the National Enquirer). That is, Druckman (2001b) supported his hypothesis with empirical evidence. Source credibility seems to not only moderate the strength of emphasis framing effects, but a degree of credibility seems to be a necessary condition for emphasis frames to have an attitudinal effect. Thus, it seems that emphasis frames are not always a powerful communication tool. The strength of this tool depends on who uses it, which is consistent with the general results of research on persuasion (e.g., Hovland & Weiss, 1951). However, it is difficult to assess the exact (moderating) influence of source credibility for emphasis framing effects, as few other framing studies explicitly replicated this finding.

Among the research on additional message cues as moderators of emphasis framing effects, an often-analyzed cue is *partisan source cues*, i.e., explicit cues that indicate for the audience which political party offered and supported a certain emphasis frame. These cues are believed to foster the influence of citizens' partisanship as a moderator of emphasis framing effects (see **Subchapter 2.4.1**), as they explicitly indicate which issue aspect the preferred political party endorses as relevant for issue interpretation. Hence, emphasis frames should be stronger when the partisan source cue for the frame matches a person's party identification, as this match can indicate for the person that adopting the frame of the matching partisan source is aligned with her or his political value preferences and helps to maintain one's political identity (Hartman & Weber, 2009).

For instance, the experimental study by Bechtel et al. (2015) mentioned earlier, which dealt with an initiative to deport criminal foreigners, not only tested the isolated attitudinal effects of emphasis frames but also accompanied the frames with explicit party cues in some additional experimental conditions. More precisely, when presenting the "humanitarianism" frame against the deportation initiative, the authors exposed participants either to this frame in isolation or to a message that not only contained this frame but also indicated that the SP stated this issue perspective. Likewise, the "crime reduction" emphasis frame appeared either in isolation or with a cue clarifying it as the issue interpretation of the SVP. As mentioned, Bechtel et al. (2015) did not find a main effect of presenting different emphasis frames on respondents' attitude toward the deportation initiative, but did at least find an effect of the humanitarianism frame on citizens identifying with the SP (see **Subchapter 2.4.1**). However, the additional partisan source cues had no influence on the (non-)effect of the emphasis frames, implying that the match between a

frame explicitly sponsored by a preferred party and a person's party identification does not increase the effectiveness of emphasis frames.

In contrast, Hartman and Weber (2009) found that the match between a partisan source cue and an individual's party identification increased the attitudinal effects of emphasis frames. Specifically, the match between party source and identification conditioned the main effect of emphasis frames the authors found for framing a planned rally of an extremist group as a question of free speech or public order (see **Subchapter 2.4.1**). The frame effect only occurred when this match existed, whereas emphasis frames explicitly endorsed by a non-preferred party were ineffective. However, when both emphasis frames were presented in simultaneous competition, no attitudinal effects were found, and a match between party cues and party identity did not establish a framing effect (Hartman & Weber, 2009).

These two studies provide inconclusive evidence for partisan source cues as a moderator of emphasis framing effects. However, Slothuus and de Vreese (2010) provide a compelling account for the question of when partisan source cues moderate the effects of emphasis frames more or less strongly. The authors argue that the strength of the influence of the match between partisan source cues and individuals' party identification depends on the strength of the partisan conflict toward the framed issue. For conflict issues, the moderating influence of partisan source cues should be stronger, because partisan conflict renders personal partisan identities more salient for citizens. This fosters motivated reasoning, i.e., citizens follow fewer accuracy goals when processing political messages, but rather employ motivational goals reinforcing one's political identity when interpreting emphasis frames (cf. Taber, Cann, & Kucsova, 2009). That is, when the issue is conflicting, citizens tend to follow only the frame offered by their preferred party. In contrast, the frames of an oppositional non-preferred party do not affect them, because such frames stem from the political opponent that threatens one's political identity. Thus, the frames of non-preferred parties are not being applicable in interpreting the issue and do not have an attitudinal effect. However, Slothuus and de Vreese (2010) argue that motivated reasoning toward emphasis frames is less pronounced for non-conflicting consensus issues between political parties. In such cases, defending one's political identity by engaging in motivated reasoning toward frames of an oppositional party is less relevant for citizens. Thus, for consensus issues, emphasis frames should exert attitudinal effects regardless of which party offers the frame, although people might still follow more strongly the frames endorsed by the preferred party.

To test this assumption, Slothuus and de Vreese (2010) conducted two experiments in Denmark. One dealt with the partisan consensus issue of international trade between China and Denmark, and varied the emphasis frames for this issue ("economic benefits" vs. "economic threats") and the partisan source cue endorsing the emphasis frame (Social Democrats vs. Liberals). The other experiment employed the issue of privatizing healthcare services for the elderly, on which Denmark's two most important political parties, the Social Democrats and the Liberals, disagreed strongly at the time the study was conducted. Besides

varying the partisan source cues, the second experiment manipulated the framing of the issue by exposing participants to either an emphasis frame highlighting the benefits of privatizing healthcare services or a frame that emphasized the benefits of the opposite, namely public service healthcare.

The results first revealed a main effect of emphasis frames on citizens' issue attitude for both issues despite the simultaneous presentation of partisan source cues. However, this main effect was somewhat stronger for the consensus issue than for the conflict issue. Moreover, a decomposition of the main effect for the conflict issue revealed that the emphasis frames were only effective when endorsed by a preferred party, while the frames had no effects when the partisan source cue did not match respondents' partisan identity. In contrast, for the consensus issue, emphasis frames were also effective without this match, although the frame effect was stronger when provided by a preferred political party. That is, Slothuus and de Vreese (2010) provided empirical evidence supporting their assumptions. In general, matching partisan source cues increased the effects of emphasis frames, but a match was only a necessary condition when the frames were applied to a partisan conflict issue. In contrast, emphasis frames explicitly endorsed by non-preferred parties also demonstrated (weaker) effects for consensus issues.

The varying strength of the moderating influence of partisan source cues on the effectiveness of emphasis frames depending on partisan conflict was also replicated in a study by Druckman et al. (2013). However, they tested this through a more complex design, exposing participants simultaneously to two competing emphasis frames with varying persuasive strength and different partisan source cues. This study is described later in this subchapter. To enable a better understanding of this study, the concept of simultaneous frame competition is introduced next, which has also been shown to moderate the attitudinal effects of single emphasis frames.

Balanced simultaneous frame competition as a contextual-level moderator

While the contextual moderators described earlier added other message features such as (partisan) source cues to single emphasis frames, other studies investigated how the effects of a single emphasis frame change when simultaneously presenting one (or more) counter-frame(s) with the opposite valence. The main reason for testing simultaneous frame competition is that it reflects with higher external validity how citizens come across emphasis frames in real political communication processes (Sniderman & Theriault, 2004). At least in democratic public spheres, not one single political actor frames political issues for the audience with one frame. Rather, different actors using different frames compete to gain public support for their issue positions. As such, in reality, citizens are often exposed to different frames for the same issue at the same time. Thus, the question is whether emphasis frames are still effective when other frames are present or whether simultaneous exposure to competing frames cancels the effects of single emphasis frames (Sniderman & Theriault, 2004). For instance, studies on frame competition ask how strongly an environmental frame can decrease a person's support for offshore oil drilling when this

person is also exposed to an economic benefits frame suggesting the opposite issue attitude. One can further differentiate studies examining a *balanced simultaneous frame competition* between two (or more) frames (e.g., Beattie & Milojevich, 2017; Sniderman & Theriault, 2004) and those exploring *unbalanced simultaneous frame competition*, where one frame is presented more often or as more relevant than the competing frame(s) (e.g., Chong & Druckman, 2007a; Tewksbury et al., 2000).

Regarding balanced competition, Beattie and Milojevich (2017) investigated in an experimental study dealing with the military conflict in the east of the Ukraine whether the attitudinal effects of four different emphasis frames are stronger when presenting only one of the frames compared to presenting all four frames simultaneously. Compared to respondents' prior issue attitude, three of the four one-sided frame exposures changed their attitude when the frames were presented in isolation. In contrast, when participants saw all four frames simultaneously, their prior attitude did not change and all single emphasis frames were entirely ineffective. That is, frame competition not only moderated the effects of single emphasis frames but also cancelled out the effects of the single frames. This implies that one-sided framing is a necessary condition for emphasis framing effects.

Hartman and Weber (2009) found a similar result in their experimental study on a planned rally of an extremist political group, which was partly described earlier in this subchapter when presenting the moderating influence of partisan source cues. They re-conducted the described experiment, but presented the frames in simultaneous competition in the same message, not one frame or the other. The results of their first experiment revealed that one-sided emphasis frames affected participants' issue attitude when the partisan source cue matched respondents' party identification. However, in the second experiment with simultaneous frame competition, no emphasis frame effects were evident, not even when accompanied by a matching partisan source cue. This result adds more evidence of the limiting influence of frame competition on the effectiveness of emphasis frames.

The moderating effect of simultaneous balanced frame competition was also analyzed by Sniderman and Theriault (2004). They conducted two experiments in which participants were exposed to one of two oppositely valenced emphasis frames or to both competing frames simultaneously. The first experiment dealt with government spending on the poor and employed a "getting ahead" emphasis frame, which focused on improving opportunities for the poor through social welfare services, and a "higher taxes" frame, emphasizing that social welfare services can be expensive and offering more of these services might lead to higher taxes. When respondents were exposed to only one of these frames, the results demonstrated a clear emphasis framing effect. Participants were significantly more supportive of social welfare services when exposed to the getting ahead emphasis frame than when receiving the higher taxes frames. However, this pattern differed for respondents exposed to both emphasis frames simultaneously, where the effects of the frames were less pronounced. Moreover, exposure to both frames sometimes had no attitudinal effect in comparison to a control group not exposed to a frame. Sniderman and

Theriault (2004) fully replicated these findings in their second experiment dealing (again) with the framing of a planned rally of an extremist group.

While the aforementioned three studies univocally suggest that simultaneous balanced frame competition moderates the effects of single emphasis frames by decreasing or even inhibiting their effectiveness, Nisbet et al. (2013) found that competition could also increase the strength of emphasis framing effects. As described in **Subchapter 2.4.1**, the authors conducted an experiment on climate change mitigation policies. The first part of their study revealed that exposure to one-sided emphasis frames did not affect citizens' attitude toward these policies, regardless of their personality trait of open-/closed-mindedness. On average, this was also the case for participants exposed to a pro frame directly followed by a con frame. However, further decomposition of the effect of competitive framing by open-/closed-mindedness showed that the frame emphasizing the relevance of climate change mitigation increased support for the policies when participants were open-minded rather than closed-minded. That is, for open-minded citizens that generally prefer being exposed to different viewpoints, competitive framing can increase the effectiveness of single emphasis frames. Thus, the role of simultaneous balanced frame competition as a moderator can be conditioned by further individual-level moderators. Competition does not always inhibit framing effects, although most of the literature suggests that in general, balanced frame competition decreases single emphasis framing effects.

Unbalanced simultaneous frame competition as a contextual-level moderator

Despite the higher external validity of studies employing balanced frame competition compared to those using simple emphasis framing, the realism of perfectly balanced framing situations can still be questioned. Even professional journalism adhering to norms of objectivity and news diversity in the sense of balanced coverage of different sides of a story (cf. Porto, 2007) does not always cover issues in an entirely balanced way. Editorial lines (e.g., Allern & Blach-Ørsten, 2011; Kaiser & Kleinen-von Königslöw, 2019) or journalists' personal interests (e.g., Brüggemann, 2014; Patterson & Donsbach, 1996) may mean that pieces of political news can contain at least two competing frames, but with the emphasis of one of these frames more pronounced. Such unbalanced simultaneous frame competition has also been investigated in various ways as a potential moderator of the effectiveness of single emphasis frames.

For example, Tewksbury et al. (2000) analyzed the effects of three types of competitive emphasis framing: balanced competitive framing presenting two opposing emphasis frames with the same prominence, unbalanced competitive framing that emphasizes one of the frames but still includes a counter-frame in the message, and one-sided emphasis framing only presenting one of the two frames. The authors conducted an experiment employing the issue of large hog farms and the emphasis frames "environment," which highlighted negative outcomes of factory farming for the environment, and "industry," which emphasized the economic benefits of larger farms.

Under the one-sided condition, participants were exposed to only one of these frames. In unbalanced frame competition condition, respondents read a news article that contained both frames but with more emphasis on environmental aspects than on economic aspects or vice versa. In the balanced condition, both frames were presented in an equally prominent way and in clear conflict to each other.

The results revealed a main effect of emphasis frames on respondents' issue attitude. However, when decomposing this main effect, only the two one-sided framing conditions differed significantly from each other and from all other framing conditions including those with unbalanced competitive framing. In contrast, the unbalanced conditions that presented both frames simultaneously but with more emphasis on one of the frame did not differ from the condition with exactly balanced frame competition. That is, the study by Tewksbury et al. (2000) suggests that emphasis frames are only effective in fully one-sided situations, but when a competing emphasis frame is also present – no matter how prominently – no effects of single emphasis frames are evident.

Chong and Druckman (2007a) explored unbalanced simultaneous frame competition in a different way. First, they integrated unequal repetition of emphasis frames in their design to test the hypothesis that the "loudest," i.e., the most often repeated, emphasis frame is also the most effective one. During the same experimental session, some participants received a pro frame twice and a competing con frame only once for the same political topic. Other respondents were exposed only once to the pro frame but twice to the con frame. In addition, other participants received both frames only once and some only one frame (i.e., either a pro or a con frame). Second, the authors manipulated as a second experimental factor the isolated persuasiveness of both emphasis frames (so-called "frame strength") leading to a "weak" and a "strong" pro frame and to a weak and a strong con frame. This enabled the authors to test whether frame competition decreases the effectiveness of single emphasis frames in general or whether this depends on the persuasive strength of the counter-frame. They expected that weak counter-frames would not decrease the effects of strong emphasis frames, and that strong frames would rather increase their effectiveness when accompanied by a weak counter-frame. This means, they expected a contrast effect of the weak counter-frame, namely that it would make the strong frame even more compelling.

To test their assumptions, Chong and Druckman (2007a) conducted an experiment dealing with an urban growth project that proposed limiting construction activities to the city center instead of building new houses at the periphery of the city. In a pretest, they analyzed potential emphasis frames for the final experiment by asking respondents to judge how compelling they found various frames for this topic when presented in isolation (i.e., as a one-sided frame). Based on the pretest results, the authors selected four frames for the final experiment. The strong pro frame "preserve open space" emphasized that supporting the project would protect the environment outside the city. This frame was judged as highly compelling. The weak pro frame "build community" highlighted that concentrating

housing in the city center fosters social exchange because of a higher population density. Respondents assessed the isolated persuasiveness of this frame as low in the pretest.

Isolated persuasiveness also differed significantly for the selected con frames. The strong con frame "economic costs" focused on prices that were too high in the city center, making the newly built houses unaffordable for many people. The weak con frame "voter competence" emphasized that the planned project would demand too much initiative from citizens who lack the competence to participate in planning the project. Using these selected frames, Chong and Druckman (2007a) exposed participants in the final experiment to 1 out of 16 experimental conditions. Those in the control group were not exposed to any frame. As mentioned, the conditions varied the four frames and (repetitive) competition between the frames (one frame, two competing frames, two frames with the same direction plus one counter-frame).

The results revealed four important aspects. First, compared to the control group, strong emphasis frames affected citizens' attitude toward the urban growth project regardless of whether it was presented alone, in competition to a strong counter-frame, or in competition to a weak counter-frame. As long as emphasis frames were compelling, frame competition did not inhibit the effects thereof. Second, weak emphasis frames were generally unable to influence respondents' issue attitude regardless of the type of frame competition including one-sided framing. This implies that the strength of a frame is a necessary condition for its effectiveness and that not all frame can be influential. Third, employing weak emphasis frames can backfire when they compete with a strong counter-frame. In situations of competition between weak and strong frames with the opposite valence, the strong frame demonstrated greater effects than competition between opposing frames with the same frame strength. Fourth, the unequal repetition of frames (at t_1) had less relevant effects. In fact, the effectiveness of repetition of a frame only increased for one of the four frames, while for the other three frames, repetition was ineffective.

Taken together, in unbalanced simultaneous frame competition, the direct repetition of frames is less important than their quality and strength. Strong frames can withstand different types of competition and do not lose their power to influence citizens' issue attitudes. This is an important qualification of the aforementioned studies on balanced frame competition. These studies revealed only minimal effects of emphasis frames when competing with others (see above). In fact, frame competition does not necessarily inhibit single emphasis framing effects as long as the frames are strong, i.e., compelling.

In the same study, Chong and Druckman (2007a) tried to replicate these findings with a further experiment dealing (again) with the issue of a planned rally of an extremist group. However, they manipulated frame strength in a problematic way, making it too shaky to validly compare the results of both experiments. To vary frame strength, the authors did not employ different frames in their second experiment, but varied solely the credibility of the source cue for the same (strong) pro and con frame. That is, they did not manipulate frame strength but source credibility, even though the authors called this frame strength. However, the two experiments can be compared in terms of the results for (unequally often)

repetition of certain frames at a single point in time. Here, the second experiment confirmed the first experiment, and repetition was mainly ineffective. More important for the influence of unbalanced frame competition on the strength of emphasis framing effects was the source cue in the second experiment. Frames offered by a credible source outperformed those by less credible sources, regardless of whether the frames were one-sided or presented in balanced or unbalanced frame competition, whereas frames by less credible sources were ineffective. This is further evidence of the relevance of source cues as a moderator of emphasis framing effects discussed above.

Partisan source cues in unbalanced simultaneous frame competition

Regarding source cues, Druckman et al. (2013) investigated the interplay between unbalanced simultaneous frame competition and partisan source cues in a further study. This experimental study was briefly mentioned earlier when presenting the role of partisan source cues as a moderator of emphasis framing effects. With the knowledge gained of the relevance of frame strength in competitive framing, it is now possible to elaborate this research. The authors conducted an experiment dealing with the issue of offshore oil drilling and exposed participants simultaneously to two competing emphasis frames for the issue, a pro and a con frame. However, the experiment varied the frame strength as being weak or strong. That is, the study employed four different frames, and participants were exposed to a combination of a (weak or strong) pro frame and a (weak or strong) con frame. The strong pro frame "economic benefits" focused on the financial profits that could be achieved by drilling, and the weak pro frame "technological developments" highlighted that building oil platforms increases technological knowledge. Furthermore, the strong con frame "maritime life" emphasized possible damages to the environment and the weak con frame "regulation" focused on the high bureaucratic effort needed to realize oil platforms. Again, the strength of these frames was successfully tested in an independent pretest.

As a second factor, the experiment varied partisan source cues on three levels. The first level contained no partisan source cues, and participants received only two competing emphasis frames (with varying frame strength). The second level added partisan source cues to the frames. The pro frame(s) were explicitly endorsed by the Republican Party, whereas the Democratic Party explicitly supported the con frame(s). Likewise, the third level added the same party cues to the frames, but in contrast to the second level, explicitly stated in the stimuli that the political parties differ starkly in their issue position and are highly polarized on the issue.

According to the results of this experiment by Druckman et al. (2013), the relevance of frame strength for the effects of emphasis frames in competitive situations compared to a control group without framing varied substantially by the level of partisan source cues and participants' party identification. Without partisan source cues, respondents that favored either the Republicans or Democrats demonstrated no differences in their susceptibility to strong emphasis frames. When a strong frame competed with a weak frame, the strong (pro or con) frame affected the issue attitudes of the supporters of both

parties. However, in contrast to the study by Chong and Druckman (2007a) mentioned earlier, strong frames had no effects when they competed simultaneously with a strong counter-frame, regardless of respondents' partisanship. Likewise, when two opposing weak frames competed with each other, they were ineffective. That is, without partisan source cues and across citizens with opposing partisan identities, strong emphasis frames exerted attitudinal effects in unbalanced competition with a weak counter-frame, although ambivalent balanced competitive situations (weak vs. weak, strong vs. strong) inhibited the effects of the emphasis frames.

When the frames were accompanied by (non-polarized) explicit partisan source cues, strong frames were still effective when competing with a weak counter-frame, regardless of whether the strong frame was endorsed by a non-preferred party and the weak frame by a preferred party, or the other way around. However, the additional party cues changed the effects of the frames in situations of balanced competition. While the frames were ineffective in such situations without party cues, participants employed these cues to solve the ambivalent competition. The frame of the preferred party exerted an effect, but no frame effect was evident when endorsed by a non-preferred party, regardless of frame strength (i.e., also for weak frames). Thus, the match between partisan identities and (non-polarized) partisan source cues moderated the effects of single emphasis frames for balanced competition, but not for unbalanced competition, where strong frames remained a significant influence on issue attitude regardless of party cues.

A more pronounced moderation influence of the match between partisan source cues and respondents' partisan identity occurred in the condition wherein participants were told that the two political parties were highly polarized toward offshore oil drilling. Regardless of frame strength and regardless of whether the frames competed with equally strong/weak or differently strong/weak frames, the frames endorsed by the preferred party demonstrated clear effects, whereas all frames by non-preferred parties were ineffective. That is, the mentioned polarization between parties increased the relevance of partisan source cues for attitude formation so strongly that the own party's frame was always effective and that by a competing party always ineffective. When parties seemed polarized, not even strong frames by a non-preferred party dampened the effect of a competing weak frame of the preferred party.

Druckman et al. (2013) fully replicated these results in a second experiment on a new law allowing easier naturalization of the children of illegal immigrants (the Dream Act). Thus, the authors provided compelling evidence for the general importance of frame strength for the effectiveness of frames in unbalanced competition situations that even persists when offered by a non-preferred political party. Moreover, they showed that partisan polarization alters emphasis framing effects in a in a similar way to partisan conflict issues (see also the study by Slothuus & de Vreese, 2010 described above). Under circumstances of partisan polarization, emphasis frames still affect citizens' issue attitudes, but only the frames endorsed by a preferred political party.

Summary

This subchapter showed that variables at the contextual level can also moderate the effects of single emphasis frames. For instance, the occurrence of these effects seems to depend on the general importance of issues. For low-importance issues, emphasis frames exert effects on citizens' issue attitudes, but do not do so for high-importance issues on which citizens already have (strong) prior opinions (Lecheler et al., 2009). In addition, only emphasis frames offered by credible sources seem effective, while those by less credible sources do not influence issue attitudes (Chong & Druckman, 2007a; Druckman, 2001b). Moreover, partisan source cues can moderate emphasis framing effects, and frame effects tend to be more pronounced when offered by a preferred political party (Hartman & Weber, 2009), especially when the framed issue contains partisan conflict (Slothuus & de Vreese, 2010) and polarization (Druckman et al., 2013). However, frames by non-preferred parties can influence citizens' issue attitudes if the polarization of parties is low (Druckman et al., 2013) or when framing consensus issues (Slothuus & de Vreese, 2010). That is, the strength of the moderating influence of the match between partisan source cues and individuals' party preferences on the effectiveness of emphasis frames depends on the relevance of partisan identity. When this identity is relevant, only frames by a preferred party are effective, but when partisan identity is not at stake, frames by non-preferred parties can also influence citizens.

Furthermore, the balanced simultaneous presentation of competing frames seems to nearly always cancel out the effects of single emphasis frames, and only one-sided emphasis frames are effective (Beattie & Milojevich, 2017; Sniderman & Theriault, 2004). However, in situations of unbalanced frame competition wherein a strongly compelling emphasis frame competes simultaneously with a weakly compelling counter-frame, strong frames influence citizens' issue attitudes, even when a non-preferred party offers the frame (at least in a non-polarized setting, see Druckman et al., 2013). Weak frames are mostly ineffective in simultaneous frame competition (Chong & Druckman, 2007a), except when endorsed by a preferred party in a polarized environment (Druckman et al., 2013).

In sum, these results suggest that emphasis framing effects are more complex than suggested in studies on simple emphasis framing effects in one-sided situations (see **Chapter 2.2**). Contextual factors can moderate these effects so strongly that emphasis frames sometimes need additional conditions to affect citizens' issue attitudes at all. Next, **Subchapter 2.4.3** discusses the implications of moderated emphasis framing effects for assessing the strength of these effects and citizens' rationality in attitude formation under framing conditions.

2.4.3 Summary and implications of moderated emphasis framing effects for assessing citizens' rationality in attitude formation

The last two subchapters (see **Subchapter 2.4.1** and **Subchapter 2.4.2**) revealed that additional variables often moderate emphasis framing effects. At the individual level, citizens, who differ in personality variables such as need to evaluate or open-/closed-mindedness and political variables such as political knowledge or partisanship, have different susceptibility to base their attitude formation on the framing of an issue or event. That is, emphasis framing effects do often not work uniformly among different citizens, and these effects are stronger for some citizens and less pronounced for others. Sometimes, specific personality traits or matches between the content of the frame and a person's political preferences are even necessary conditions for emphasis frames to be effective at all in influencing citizens' issue attitudes (see **Table 2** for an overview of the different moderating influences of individual-level variables).

However, empirical studies on individual-level moderators are sometimes contradictory, particularly on the influence of political knowledge. This makes it difficult to draw an exact picture of those most susceptible and those immune to emphasis framing effects. There are, however, good reasons to assume the strength of prior attitudes as the most important individual-level moderator. Strong prior attitudes are very likely to dampen the strength of emphasis framing effects, as such attitudes are generally more resistant to persuasive attempts (Krosnick & Petty, 1995), and thus, probably also to emphasis framing. Still, studies on this influence at a single point in time are rare, and the few that tested for this influence employed the rather rough measure of need to evaluate as an indicator for prior attitude strength (e.g., Druckman & Nelson, 2003). However, **Chapter 2.6** provides further evidence of the prominent role of attitude strength when examining emphasis framing effects over time.

Alongside variables at the individual-level, contextual variables have shown to moderate the strength and sometimes even the occurrence of emphasis framing effects on citizens' issue attitudes (see **Table 3** for an overview). When non-credible sources offer a certain frame interpretation and this source is visible, emphasis framing effects are often not evident. Only credible sources are able to influence citizens with their frames. Moreover, the emphasis frames provided by a preferred political party demonstrate stronger effects than frames provided by non-preferred parties. In addition, the simultaneous presentation of competing frames often cancels out the effects of single frames, and in general, only simple one-sided emphasis framing exerts relevant attitudinal influences. Last, emphasis frames themselves can differ in their effectiveness, and when frames with different persuasive strength compete simultaneously, only strong (i.e., compelling) frames influence issue attitudes, particularly when the counter-frame is weak.

Table 2. Summary of empirical results for individual-level moderators of emphasis framing effects on citizens' issue attitude (for frame exposure at t_1)

Moderator	Result(s) (with reference)
Personality variables	
Need to evaluate	– Stronger frame effect when need to evaluate is low (Druckman & Nelson, 2003)
Need for cognition	– No influence on main effect of frame (Tewksbury et al., 2000)
Open-/closed-mindedness	– Frame effect only when open-mindedness is high and competing frames are present (Nisbet et al., 2013)
Political variables	
Political knowledge	– Only frame effect when knowledge is low (Bechtel et al., 2015; Haider-Markel & Joslyn, 2001; Schuck & de Vreese, 2006) – Frame effect stronger when knowledge is low (Beattie & Milojevich, 2017) – For some frames, stronger effects when knowledge is high but, no difference by knowledge for other frames (Chong & Druckman, 2007a; de Vreese et al., 2011) – Frame effect stronger when knowledge is high (Lecheler & de Vreese, 2012) – Frame effect stronger when knowledge is high and when need to evaluate is controlled (Druckman & Nelson, 2003) – Only frame effect when knowledge is moderate or high (Slothuus, 2008) – Only frame effect when knowledge is high (Nelson, Oxley et al., 1997)
Schemas	– Framing effect independent of citizens' individual schemas (Shen, 2004b)
Issue importance (individual)	– No difference in framing effect (for generally unimportant issues) between participants judging the issue as personally important or unimportant (Lecheler et al., 2009)
Partisanship	– Only frame effect when frame content matches issue position of preferred party (Haider-Markel & Joslyn, 2001) – No frame effect when content matches issue position of preferred party A, but frame effect when preferring party B and frame content matches issue position of this party (Bechtel et al., 2015)
Political values	– See **Table 4** in **Subchapter 2.5.4**

Table 3. Summary of empirical results for contextual moderators of emphasis framing effects on citizens' issue attitude (for frame exposure at t_1)

Moderator	Result(s) (with reference)
Issues and cues	
Issue importance (on aggregate)	– No frame effect when issue is important in society, but frame effect when issue is less important (Lecheler et al., 2009)
Group cues	– Only frame effect when framed issue deals with specific stereotyped groups (Igartua & Cheng, 2009) – Frame effect independent of which stereotyped group is mentioned in the framed issue (Igartua et al., 2011)
Source credibility	– Only frame effect when source is credible (Druckman, 2001b)
Partisan source cues (and party polarization)	– No influence of partisan source cue on insignificant frame effect (Bechtel et al., 2015) – When one-sided framing, only frame effect when partisan source cue matches individuals' party identification + when competitive framing, no frame effect regardless of match between party cue and identification (Hartman & Weber, 2009) – When consensus issue, frame effect stronger when partisan source cue matches individuals' party identification + when conflicting issue, only frame effect when partisan source cue matches party identification (Slothuus & de Vreese, 2010) – When no party cues, strong frames effective independent of individuals' party identification despite simultaneous presentation of weak counter-frames, while no effects of equally strong/weak frames + when party cues, strong frames effective independent of party identification despite weak counter-frames, while effects of equally strong/weak frames only for frame offered by preferred party + when party cues and party polarization suggested, no general frame effects but only for frames offered by preferred party regardless of frame strength (Druckman et al., 2013)
Frame competition	
Balanced frame competition (simultaneously at t_1)	– Effect of one-sided frames, but no frame effect when competing frames (Beattie & Milojevich, 2017; Hartman & Weber, 2009) – Effect of one-sided frames, but no or less pronounced effect when competing frames (Sniderman & Theriault, 2004) – No effect of one-sided frames, but when competition and open-mindedness high, effect of one of the frames (Nisbet et al., 2013)
Unbalanced frame competition (simultaneously at t_1)	– Compared to equally strong emphasis on two competing frames, no effect of moderately one-sided frames, but effect of clearly one-sided frames (Tewksbury et al., 2000) – Strong frames always effective regardless of whether presented without competition or with strong and/or weak counter-frames + weak frames ineffective + strong frames with weak counter-frames boosts effect of strong frames + (unequal) repetition of frames rather ineffective (Chong & Druckman, 2007a)

Based on the results of the moderating influences, it can be concluded that the occurrence of emphasis framing effects tends to be more complicated than suggested by the initial studies on simple emphasis framing effects (see **Chapter 2.2**). Therefore, these results demand an adjusted assessment of the implication of emphasis framing effects for citizens' rationality in attitude formation. In fact, emphasis framing effects do not work uniformly for all citizens. When an emphasis frame starkly contrasts a person's political partisanship, political orientation, or prior attitudes, the resulting effect is often lower or non-existent compared to the stronger effects of frames that match citizens' political predisposition.

As outlined in **Subchapter 2.2.2**, rationality in attitude formation can be defined as the stability of preferences that should remain unchanged as long as substantive thematic information remains unchanged (Tversky & Kahneman, 1981). Thus, the effects of frames that match citizens' political preferences can be interpreted as a reinforcement of prior preferences and therefore, as a form of the rational stability of preferences. That is, at least such emphasis framing effects do not indicate that citizens' attitude formation takes place irrationally under framing conditions. For instance, a voter for the Democrats will rather unlikely be influenced by a civil rights emphasis frame that opts against regulating the possession of guns, as this frame does not fit the general policy of the Democratic Party regarding this issue.

However, it is also too easy to judge emphasis framing effects as entirely rational. In fact, the attitude of the same type of person can differ significantly when there is a matching emphasis frame in comparison to the exposure of the same type of person to an oppositional counter-frame or to no explicit frame. That is, different emphasis frames still lead to different issue attitudes for the same type of person, violating the idea of rationality as the stability of an attitude that should not alter based on simple changes in the frame. However, it seems that this violation mostly takes place in a direction aligned with citizens' political predisposition, but is less pronounced in the opposite direction, i.e., in the form of effects of non-matching emphasis frames.

Furthermore, citizens do not blindly follow any emphasis frame. Inherently less compelling frames are rather ineffective in attitude formation, whereas only compelling and applicable frames can influence citizens' issue attitudes. Moreover, when frames are compelling, they may even affect citizens with non-matching predispositions. This means that strong frames are not only capable of reinforcing existing predispositions, but the quality of the frame can form attitudes that overcome the biases of prior political attitudes. Thus, it seems that citizens mostly react rather rationally to emphasis frames and seem to consciously weight the quality of frames. Again, this does not speak for strong threats of rational attitude formation owing to emphasis framing.

Most important, studies suggest that the simultaneous presentation of competing frames prevents irrationality in attitude formation. When competing emphasis frames are equally strong, frame effects are rarely evident, and when one frame is stronger than the competing one, citizens tend to follow the more compelling frame in a rational manner. If

there are unsubstantiated shifts in attitudes due to emphasis framing, then these shifts occur mainly in one-sided situations or because of additional factors not directly related to framing, such as polarized party cues.

In sum, the persuasive power of emphasis frames is often limited to compelling one-sided emphasis frames that must match citizens' political predispositions and be provided by credible sources to affect citizens' issue attitudes. Therefore, the preliminary conclusion based on the empirical results on simple emphasis framing effects (see **Subchapter 2.2.2**) must be adjusted. Emphasis framing effects are often limited in their strength and conditioned by various individual and contextual moderators. If at all, emphasis frames pose a risk to rational attitude formation when presented in one-sided situations. Such situations are rather rare in democratic public spheres, in which various frames for an issue compete for attention. However, even in such one-sided situations, it seems more likely that those frames are effective that reinforce preexisting preferences, rather than the ones that offer issue interpretations that contrast prior political preferences. This implies that irrational preference violations can occur because of emphasis framing, but rather rarely.

The role of prior preferences in the strength of emphasis framing effects is explored in more detail in the next **Chapter 2.5** by examining citizens' political value preferences and how they interact with value emphasis frames that employ political values to construct the meaning of political issues and events. Value emphasis framing is a very prominent type of emphasis framing employed by political actors (Hänggli & Kriesi, 2010; Z. Pan & Kosicki, 2001) and news media (B. T. Scheufele & Engelmann, 2013), and expected to exert relatively strong attitudinal effects (Beattie & Milojevich, 2017; Schemer et al., 2012; Shen & Edwards, 2005). Thus, political values deserve particular attention when assessing the strength of emphasis framing effects.

2.5 Role of political values in emphasis framing effects

2.5.1 Defining political values and the general influence of citizens' value preferences on attitude formation

In research on emphasis framing effects, political values have a prominent role in both, the construction of emphasis frames by political actors and the news media (Ball-Rokeach, Power, Guthrie, & Waring, 1990; Brewer & Gross, 2005; B. T. Scheufele & Engelmann, 2013), and in the explanation of framing effects on citizens who employ such values to interpret political issues (A. C. Andrews et al., 2017; Shen & Edwards, 2005). Thus, this chapter defines the concepts of political values and political value preferences, and explains how these values influence citizens' attitude in general (see **Subchapter 2.5.1**). It also describes how political actors employ political values in their framing of issues and the attitudinal effect on citizens after exposure to such value frames (see **Subchapter 2.5.2**). Whether and how citizens' political value preferences moderate the effects of value emphasis framing are then explored (see **Subchapter 2.5.3**). Finally, citizens' rationality in

attitude formation considering the role of political value preferences is elaborated (see **Subchapter 2.5.4**).

Definition of basic human values

As political values can be understood as a subtype of *basic human values* (Piurko, Schwartz, & Davidov, 2011; Schwartz et al., 2010; Schwartz et al., 2014), these basic values must be defined before defining political values. Basic values describe superordinate beliefs about what is important in life (Schwartz, 2012). They refer to what a person judges as desirable terminal goals or end states of human behavior, and to desirable instrumental means to achieve these goals (Rokeach, 1973; Rokeach & Ball-Rokeach, 1989). A person's basic values transcend specific situations and thus, are rather stable preferences of what is evaluated as important in how to act in life (Schwartz, 1992). That is, basic values serve as standards or criteria (Ball-Rokeach & Loges, 1994) by which persons decide what is "good or bad, justified or illegitimate, [or] worth doing or avoiding" (Schwartz, 2012, p. 4).

People do not hold only one basic value but various values (Rokeach & Ball-Rokeach, 1989). Nevertheless, persons attach different importance to different values and thus, have a hierarchical order of their values (Rokeach & Ball-Rokeach, 1989; Schwartz, 1992). However, this value hierarchy does not necessarily mean that a person dislikes or opposes values not on top of their individual hierarchy, but that there are less important criteria of evaluation than the values considered more important in a person's individual value hierarchy (Ball-Rokeach & Loges, 1994). For instance, even if a person prefers the basic value of achievement, i.e., personal success, to the value of benevolence, i.e., helping others, this does not mean this person entirely rejects the importance of helping others. However, in case of doubt, the person will better evaluate actions and events that help achieve personal success than those more strongly connected to helping others.

According to Schwartz (2012), ten different basic values located on two dimensions can be differentiated: self-enhancement vs. self-transcendence and conservation vs. openness to change (also see Schwartz, 1992). Values of self-transcendence are universalism and benevolence, i.e., the goal of protecting the welfare of all people and nature (universalism) or merely of one's in-group (benevolence). In contrast, the basic values of power, achievement, and hedonism relate to goals of self-enhancement. Preferring these values implies attributing importance to social status and dominance over people (power), to personal success and competence (achievement), and to pleasure for oneself (hedonism) in life. With the values of self-direction and stimulation, hedonism also relates to openness to change. These values highlight the relevance of independence and autonomy (self-direction), and of excitement and new challenges (stimulation). Opposite to openness to change, security, conformity, and tradition are located as basic values of conservation. People who prefer conservation values favor the safety and stability of society and relationships (security), respect and commit to traditional ideas of culture or religion (tradition), and inhibit inclinations that could harm others or violate social norms (conformity).

Intra-individually, the importance attached to these basic human values are rather stable (Vecchione et al., 2016), although they differ considerably between individuals in terms of relevance (Schwartz, 2012). Some individuals prefer hedonism across situations and time, while others adhere to the value of conformity in a stable way. Moreover, while the general structure of these ten values seems to apply across different cultures, differences do exist in the relevance of certain values in different cultures (Maio, Olson, Bernard, & Luke, 2006; Schwartz, 1992), although there does seem to be a "pan-cultural baseline of value priorities" (Schwartz, 2012, p. 14), and the values of self-direction, benevolence, and universalism are most important in most countries. However, despite the intra-individual stability of value preferences and the influence of culture on these values, aggregated value preferences in a certain society can change over time, rather slowly and not necessarily linearly, but in pendulum movements (Rokeach & Ball-Rokeach, 1989). For example, sociologists have observed that the universalistic value of egalitarianism increased in importance in American society, but with several backward movements in this increase over several decades (Rokeach & Ball-Rokeach, 1989).

Definition of political values and their general role in citizens' attitude formation

While basic human values refer to all aspects in life, from the relevance of personal needs over various levels of the importance of relations with others and societal norms to the (un-)importance of welfare for all people and nature, *political values* are *stable and superordinate conceptions of desirable or undesirable means and goals that relate more exclusively to the fields of politics, society, and public affairs* (Goren, 2005; Jacoby, 2006). Like basic human values, citizens adhere to political values such as liberty, equality, economic security, or social order to varying degrees and thus, citizens possess an individual hierarchy of political values and prefer certain political values over others (Jacoby, 2006). That is, citizens show rather stable *political value preferences*.

However, again, this does not necessarily mean they oppose political values that are not on top of their individual value hierarchy. Empirical results have revealed that citizens also demonstrate a certain degree of ambivalence between different political values (Feldman & Zaller, 1992), implying that they recognize the relevance of values that are not their most preferred values, which can sometimes even reduce the certainty with which they hold specific political attitudes (Tetlock, 1986). For instance, even if a person prefers the political value of civil rights to security, it will be difficult for that person to ignore security as another relevant political goal that is (also but somewhat less) important to achieve. Likewise, when a person favors economic stability over the protection of the environment, environmental values will likely be recognized as important, but simply less important than economic stability.

The sum of political value preferences, i.e., the entire political value hierarchy of a person, can be understood as its *political ideology*, which is located on a more abstract level than political values (Goren, 2005; Hitlin & Pinkston, 2013; Maio et al., 2006). Political ideologies as guiding principles by which to interpret the social and political world (Jost,

Federico, & Napier, 2009) consist of a person's stance on several political values and are thus multidimensional (Feldman & Johnston, 2014). For instance, Jacoby (2014) showed that conservatives, moderates, and liberals, i.e., groups with different political ideologies in the US, differ substantially regarding their political value preferences for morality, social order, patriotism, economic security, equality, freedom, and individualism. Moreover, within these different ideologies, political value preferences are distributed rather equally across different levels of income (Ciuk et al., 2017). That is, political ideology explains political value preferences equally strongly for citizens with different incomes, i.e., these value preferences are not simply the result of a person's income level.

In turn, political values such as the preferences for economic-individualism, civil rights, or egalitarianism influence more specific political attitudes located at the least abstract level (Hitlin & Pinkston, 2013; Maio et al., 2006). Citizens can potentially possess "as many attitudes as there are objects in the world" (Ball-Rokeach & Loges, 1994, p. 13), while the number of political values citizens use to form these attitudes is limited. That is, citizens employ their stance on certain political values to interpret specific political issues, policies, and events. These values provide guidance for judging certain political questions as good or bad or as right or wrong in relation to these values and thus, political values can serve as meaningful criteria of evaluation for complex and specific political questions. For instance, Feldman (1988) showed that the political core values of equality of opportunity, economic-individualism, and free enterprise explained citizens' specific attitudes on 11 of the 14 most important political issues in the US during field time. Likewise, Conover and Feldman (1984) found that interpersonal-religious, individualistic-materialistic, non-materialistic-societal, and personalistic-conduct values explained citizens' issue position on 10 of 11 political topics. That is, political values function as an important standard of reference in interpreting the political world and guide the formation of specific political attitudes.

However, in addition to political values directly related to politics, basic human values also explain political issue attitudes. For example, Goren, Schoen, Reifler, Scotto, and Chittick (2016) revealed that basic values of self-transcendence (universalism and benevolence) and of conservation (security, conformity, and tradition) predicted citizens' attitudes for economic welfare issues, racial issues, cultural issues, foreign policy, and unilateralism. Likewise, Schwartz et al. (2010) showed that basic human values explained political values (law and order, traditional morality, equality, free enterprise, civil liberties, blind patriotism) that then influenced citizens' attitudes and voting behavior.

Moreover, the relevance of citizens' political value preferences in the formation of specific political attitudes seems rather independent of their political knowledge (Feldman & Zaller, 1992; Goren, 2001) and economic situation (Ciuk et al., 2017). That is, political values seem to serve different individuals equally strongly in terms of attitude formation. For example, Ciuk et al. (2017) analyzed whether citizens' income level moderated the relationship between citizens' preference for the values of equality, moral tradition, and economic security and their support for president Obama. They found that a value

preference for equality and economic security increased support for Obama, while a preference for moral traditionalism decreased support. These relationships did not differ substantially across income levels.

Furthermore, Goren (2001) showed that citizens' stance on the political values of economic-individualism and equal opportunity predicted their specific attitudes on social welfare and that political expertise did not condition these relationships. Likewise, the author found that varying preferences for the political values egalitarianism and moral conservatism explained citizens' attitudes toward anti-discrimination policies across different levels of political knowledge. That is, political values are meaningful standards of evaluation for politically knowledgeable citizens, but those with less political knowledge also employ their political core values to judge specific political issues and policies.

However, other studies revealed that lower political knowledge can sometimes reduce the relevance of political value preferences in the formation of single political attitudes, which can happen when people who are less politically aware simply do not know that forming a certain attitude counters their value preferences (Jacoby, 2006). Here, the role of news media comes into play in terms of explaining to citizens the meaning of specific issues and issue positions for their political values. For example, Brewer (2003) showed that citizens employed their stance on egalitarianism to form an issue attitude on gay rights regardless of whether they were generally politically aware or not, because the news media extensively covered the perspective of egalitarianism when reporting on the issue. However, for political values with less news media coverage on the topic, the relationship between these values and citizens' issue attitude was more pronounced for those with higher political knowledge. In contrast, citizens with less knowledge established a weaker connection between these political values and their attitude toward the topic.

While the literature is rather clear about the function of political values as important evaluation criteria for citizens to form specific political attitudes, it is rather equivocal about the question of which political values are most important and actually employed by citizens in attitude formation. Basic human values can be located in a theoretically meaningful manner on different dimensions, and the quantity of and relation between different human values is well established (cf. Schwartz, 1992, 2012, see also above). However, many different enumerations of political values exist that are not well connected to each other. Instead, nearly all studies on citizens' political value preferences propose different political values important to examine. It is not the aim of this book to solve this theoretical desideratum by differentiating various political values, as this task goes far beyond the question of value emphasis framing effects. Nevertheless, it is important to briefly overview the different political values proposed as relevant in the literature, as this also reveals the many different values political actors can employ in their emphasis frames to construct the meaning of an issue or event, which often represent central political cleavages in societies (cf. Kriesi, 2010).

Authors have proposed additional political values other than those already mentioned. For example, Feldman and Steenbergen (2001) contended that

humanitarianism is an important value to explain attitudes on social welfare (see also K. J. Hansen, 2019; Steenbergen, 1996). Likewise, Calzada, Gomez-Garrido, Moreno, and Moreno-Fuentes (2014) showed that political values such as multiculturalism, egalitarianism, authoritarianism, gender traditionalism, and meritocratic values "lie at the roots of welfare attitudes" (p. 178) in 26 European countries. In their study, egalitarianism was the most important predictor for social welfare attitudes in the countries analyzed. Other relevant political values mentioned in the literature are equal opportunity, traditional family values, limited government, moral tolerance (all Goren, 2005), protestant ethics of individualism and meritocracy (Katz & Hass, 1988), right neo-liberalism vs. left neo-Keynesianism (Schmidt, 2014), materialism vs. post-materialism (Inglehart & Abramson, 1994; Inglehart & Baker, 2000), green/alternative/libertarian vs. traditional/authoritarian/nationalist political values (Hooghe, Marks, & Wilson, 2002), integration vs. demarcation (Kriesi et al., 2006), or libertarian-universalistic vs. traditionalist-communitarian values (Bornschier, 2010). Clearly, a wide range of political values can guide citizens' attitude formation for nearly any specific political issue or event.

Summary

To sum up, in this subchapter political values were defined as a subtype of basic human values that describe stable and superordinate conceptions of desirable or undesirable means and goals relating to the field of politics, society, and public affairs. Citizens adhere to political values to varying degrees and hierarchically structure their political value preferences. This general preference structure consisting of different political values can be understood as a person's political ideology, which is located at the most abstract level. Political values serve citizens as criteria of evaluation for more specific political issues or events located at the least abstract level and thus, political values play an important role in citizens' political attitude formation. Next, **Subchapter 2.5.2** describes why and how political actors employ political values when constructing emphasis frames, provides examples of value emphasis frames in news coverage, and presents empirical findings on the general attitudinal effects of value emphasis frames.

2.5.2 Value emphasis frames and empirical results for their general attitudinal effects

Value framing by political actors and value emphasis frames in news coverage

When political actors think about their communication strategies to gain public legitimacy for their political ideas and issue positions, they must make several choices. Besides the question of which audience should be addressed via which channel, the most important choice concerns the message itself (Hänggli & Kriesi, 2012). According to Hänggli and Kriesi (2010), political actors face at least three important decisions regarding the selection of the message(s) they want to disseminate. First, they must choose which and how many substantive frames to present for their issue position ("substantive emphasis choice").

Often, political actors limit their selection to only one substantive frame they believe to be compelling, as they do not want to risk confusing their audience with too many different frames for the same topic (Hänggli & Kriesi, 2012). Second, political actors must decide whether to pay attention to their political competitors' opposing frames ("oppositional emphasis choice"). Empirically, it seems they pay some attention to opposing frames, especially to attack them, but more often, political actors focus on their own frames (Hänggli & Kriesi, 2010, 2012). Last, political actors must determine the degree to which they focus on the contest between different political actors ("contest emphasis choice"), i.e., how much they want to focus on the game of politics other than presenting their (own or opposing) substantive emphasis frames.

Political values play an important role in the substantive emphasis choice. As political actors aim to limit their framing to one frame, this frame needs to be very compelling. To achieve this, reference to political values can be highly beneficial for – at least – three reasons. First, using political values to frame an issue can reduce complexity and can *eliminate conflict* between differently valenced considerations of an issue (Nelson, 2004). By employing political values, a political actor can reduce issues to an easy decision. For instance, telling citizens that being in favor of anti-terrorist surveillance measures means being in favor of national security reduces the topic to the very easy question of whether one is in favor of or against national security. Certainly, making this decision is less complex for citizens than deciding about the details of the surveillance measure, such as at which exact point of threat to security a judge should decide on whether a certain phone-tapping is appropriate.

Second, citizens *already know* political values and thus, do not need much explanation. That is, using political values to frame issues makes the issues easy to understand. Put differently, political values are cognitively available and easily accessible considerations, which are two important preconditions for the effectiveness of emphasis frames (Chong & Druckman, 2007b, also see **Subchapter 2.3.1**).

Third, political values are highly applicable, which is the third necessary condition for emphasis framing effects (again, see **Subchapter 2.3.1**). This is because such values contain high *cultural resonance* and most citizens agree on their relevance as criteria of evaluation (Entman, 2004; Z. Pan & Kosicki, 2001). That is, frames that use political values are not easily declinable, even though they might not be at the top of an individual's value hierarchy. Probably, not many people consider security a completely unimportant criterion to evaluate an issue or consider freedom an entirely unnecessary goal for political decisions. In other words, most political values "are widely cherished among the public" (Brewer & Gross, 2005, p. 929), and employing such values for the emphasis framing of specific political topics can render such frames highly effective in influencing citizens' issue attitudes than more issue-specific frames that only emphasize a highly specific aspect of an issue. Therefore, political values are "powerful and reliable weapons in the persuader's arsenal" (Nelson & Garst, 2005, p. 490) and thus, often used by political actors in their framing

behavior (Brewer & Gross, 2005). Formulated differently, these actors often offer *value emphasis frames* to their audience.

However, value emphasis frames do not only exist in the strategic communication of political actors, but also in news media coverage (Ball-Rokeach et al., 1990). On one hand, this is because news media rely on the strategic communication of political actors when covering political events. On the other, journalists are also proactive actors in the framing of political issues (see Brüggemann, 2014 for the differentiation of the role of journalists in "frame sending" and "frame setting"). Like ordinary citizens, journalists rely on political values when interpreting issues and employ value frames in their coverage because such frames "are powerful and efficient tools for the organization and symbolic construction of the meaning of issues and events" (Ball-Rokeach et al., 1990, p. 256). Moreover, value frames help journalists explain in a brief and understandable way what an issue is about, which is particularly important given the space and time constraints of journalists in their daily work (Hoffman & Slater, 2007).

Many studies have analyzed the occurrence of value emphasis frames in news coverage revealing that such frames are rather often presented. For example, Ball-Rokeach et al. (1990) investigated issue framing by the US media of abortion, finding that the often-employed "pro-choice" frame connected the issue with the values of equality and freedom, whereas the other relevant frame ("pro-life") used the values of salvation, obedience, and family security to construct the meaning of abortion. In a quantitative content analysis of news magazine coverage between 1950 and 1992, Kellstedt (2000) examined how often the media's framing of affirmative action for discriminated ethnic groups employed references to the political values of egalitarianism and individualism. The results showed that the value emphasis frame dealing with egalitarianism was more prominent until the mid-70s, after which the individualism frame increased in importance and was covered as often as egalitarianism.

Another quantitative content analysis dealt with news coverage on gay marriage, showing that the emphasis framing of conservative and liberal newspapers relied on different political values (P.-L. Pan, Meng, & Zhou, 2010). Conservative newspapers framed the issue mostly around morality and family values, whereas liberal outlets focused their framing on the political value of equality. B. T. Scheufele and Engelmann (2013) employed a slightly different angle on value frames in news coverage by analyzing not the media's framing of issues, but how the news media in their news coverage related the two major German political parties and their party leaders to 20 different political values. In doing so, the authors differentiated between left values (e.g., equality, solidarity, pacifism, environmentalism, multiculturalism) and right values (e.g., freedom, security, neo-liberalism, economic growth, Christian morality). The results indicated that news media related the mid-right party Christian Democratic Union (CDU) correctly to right political values and the mid-left Social-Democratic Party of Germany (SPD) correctly to left values. Moreover, media outlets with different editorial lines were equally correct in relating parties to respective political values. This means that the value framing of the German media

appropriately located the political parties in the political space, which may help citizens decide which party best represents their political value preferences.

Schemer et al. (2012) performed another quantitative content analysis to detect value emphasis frames in news coverage on a referendum campaign in Switzerland, dealing with a political initiative concerning immigration. The initiative asked Swiss citizens whether the naturalization of individual immigrants should be based on the decision of popular votes in the municipalities, i.e., in the form of a direct democratic decision by the local population, or based on the decision of courts, which would give individual immigrants the right to sue an appeal process if their naturalization application is rejected.

The authors found three relevant emphasis frames regarding this issue in the news coverage. Two frames were in favor of popular votes on naturalization (pro frames: "people final say" and "mass naturalization"), which "clearly address[ed] values of traditionalism, social dominance, and security" (Schemer et al., 2012, p. 339). A third frame, called "rule of law," was against the popular vote but favored the decision of naturalization by courts. This con frame also employed references to political values such as egalitarianism and human rights. In sum, the two pro value frames together and the con value frame were nearly equally often present in news media reporting. Schemer et al. (2012) also analyzed the effects of citizens' exposure to these frames by employing a linkage analysis. However, the authors did not only focus on the main effects of exposure to these value emphasis frames, but also on the moderation of these effects by citizens' political value preferences. Thus, the results of this study regarding moderated value emphasis framing effects are described later (see **Subchapter 2.5.3**). Before that, it is necessary to present some empirical findings on the general effects of value emphasis frames on citizens' issue attitude.

Empirical results on the general effects of value emphasis frames on citizens' issue attitudes

Given that political actors employ value emphasis frames in their strategic communication, and the media cover these frames in their coverage and present their own value emphasis frames for political issues, studies have also investigated the general effects of citizens' exposure to value emphasis frames. Like in the chapters before, the discussion of studies on value emphasis framing effects is limited in the following to those that examined citizens' issue attitude at a single point in time as the central dependent variable. However, note that effects of value emphasis frames have also been found on other variables such as citizens' use of value-laden language when explaining their issue position (Brewer, 2002; Brewer & Gross, 2005), citizens' issue interpretations (Domke et al., 1998; Shah et al., 1996), their decision strategies for choosing a political candidate (Barker, 2005; Domke et al., 1998; Shah et al., 1996), relating politicians and parties to certain political values (B. T. Scheufele, 2010; B. T. Scheufele et al., 2012), and recommending certain parties to friends based on framed political values (B. T. Scheufele et al., 2012).

While the aforementioned studies on other dependent variables explicitly employed the label "value frame" for the frames in their experimental studies, some of the research

on emphasis framing effects discussed in preceding chapters also used political values to construct their framing stimuli, but did not explicitly label them as value emphasis frame. That is, implicitly, the chapters before provided already some evidence of the effectiveness of value emphasis frames, which is now described here more explicitly as the main effects of value emphasis frames. Thereafter, the next **Subchapter 2.5.3** discusses studies on moderated value emphasis framing effects. However, some of the studies on the main effects of emphasis frames introduced before noted at least that they employed political values when constructing their frames (Druckman, 2001b; Nelson, 2004; Nelson, Clawson et al., 1997; Nelson & Oxley, 1999), while others did not refer to political values at all, even though the frames employed in the experiments clearly used political values (Bechtel et al., 2015; Haider-Markel & Joslyn, 2001; Nisbet et al., 2013).

For instance, the three experiments in the study by Nelson (2004) reviewed in **Subchapter 2.2.1** demonstrated clear main effects of value emphasis frames on citizens' issue attitudes. The first experiment employed frames highlighting the political value of civil rights either for children or parents, which produced significantly different issue attitudes. The frames in the second experiment on affirmative action referred either to the value of meritocracy (the "excellence frame") or to the value of egalitarianism (the "opportunity frame"), also influencing citizens' attitudes. In the third experiment, emphasis frames were constructed around political values by focusing either on neo-liberal values of market competition in the "school quality" frame or on the value of secularism in the "church-state" frame, which, again, led to different attitudes depending on exposure to one of these frames.

The study by Druckman (2001b), mentioned in **Subchapter 2.4.2**, also implicitly provided evidence for value emphasis framing effects in two different experiments when the frames were presented by credible sources. In the first experiment on government's spending on the poor, participants received either a frame highlighting the political value of humanitarianism or an "expenditures" frame that employed the political value of limited government (cf. Goren, 2005), which significantly affected citizens' issue attitude. The frames in the second experiment also demonstrated a main effect on issue attitude when presented by a credible source. Both frames dealt with a planned rally of an extremist political group, but employed either the political value of civil rights or the value of public safety. The second experiment simultaneously replicated the study by Nelson, Clawson et al. (1997), who also found significantly different attitudes toward such rallies when employing one of these competing value emphasis frames (see **Subchapter 2.2.1**).

Furthermore, the value emphasis frames civil rights and public safety were also investigated in an experiment by Haider-Markel and Joslyn (2001), presented in **Subchapter 2.4.1**. The results of this study provide evidence for the effectiveness of value frames, as citizens formed significantly different attitudes toward a new handgun law based on exposure to different frames. Moreover, the effects of value emphasis frames have been implicitly confirmed in the two experiments by Nelson and Oxley (1999) (see **Subchapter 2.2.1**). The first experiment on a land development project framed this issue either as a

question of economic growth or environmentalism, both fundamental political values. Again, citizens formed significantly different issue attitudes depending on frame exposure. This was also the case in the second experiment dealing with social welfare for young mothers. Here, the frames "threat to children" and "personal responsibility" clearly mirrored the competing political values of humanitarianism and economic-individualism.

However, other studies that implicitly employed political values in their framing experiments found no main effects of value emphasis frames. For example, the experiment by Bechtel et al. (2015) already described in **Subchapter 2.4.1** did not find different issue attitudes depending on different framing conditions, even though the frames employed referred to political values. The authors framed the issue of the deportation of criminal foreigners using either the political value of humanitarianism or public safety. Likewise, Nisbet et al. (2013) did not find main effects of their frames on climate change mitigation policies that mirrored the classic political values of environmentalism, national security, and economic growth (see **Subchapter 2.4.1**).

Other than these studies working rather implicitly with political value frames, studies explicitly investigating the simple main effects of value emphasis frames on citizens' issue attitudes are rare (but see next **Subchapter 2.5.3** for an explicit examination of value emphasis framing effects moderated by citizens' political value preferences). It seems that only the study by B. T. Scheufele and Gasteiger (2007) explicitly employed value emphasis frames and measured their main effects on issue attitude. The authors conducted a two-factorial experiment on a fictive military intervention of the German army in a fictive African country in the midst of a civil war. As dependent variables, participants reported their attitude toward this intervention and their emotions. The first factor manipulated the textual value framing of a news article respondents were asked to read. One frame employed the political value of humanitarianism and emphasized the importance of a military intervention by the German army in liberating the civilian population from the war between different local conflict parties. The other frame focused on the military intervention as a political-military strategy to force the conflict parties into political negotiations. As a second factor, B. T. Scheufele and Gasteiger (2007) manipulated a picture in the news article that mirrored the two different textual value frames by displaying either children as victims (corresponding with the value frame of humanitarianism) or armed rebels (relating to the political-military frame).

For the elicited emotions, the authors found mainly textual value framing effects. For instance, exposure to the humanitarian frame increased participants' compassion and solidarity with the civilian victims and their contempt for the conflict parties. Regarding respondents' attitude toward a military intervention by the German army, the results indicated two independent main effects of both the textual value framing and the visual framing of these values. Specifically, participants supported an intervention significantly more strongly when exposed to the humanitarian frame than when exposed to the political-military frame, and more strongly when they saw the picture with children as victims than the visual with armed rebels. That is, value emphasis frames affected citizens' attitude

formation as the authors expected, adding further evidence of the main effects of value emphasis frames on issue attitudes.

Summary

This subchapter showed that political actors and the news media often employ value emphasis frames to construct the meaning of political issues and events. Drawing on political values has the advantage that the resulting value emphasis frames are based on available, accessible, and applicable criteria of evaluation that are culturally shared. Thus, the audience cannot easily ignore such frames as important issue perspectives, even if the political value employed by an emphasis frame is not at the top of a person's individual value hierarchy. Consequently, empirical studies have revealed that value emphasis frames exert main effects on citizens' issue attitudes. That is, value emphasis frames seem to be the "powerful and reliable weapons in the persuader's arsenal" (Nelson & Garst, 2005, p. 490) contended in the theory, at least in one-sided situations in which only one value emphasis frame is present. However, it is not yet clear whether the revealed main effects are actually the result of affecting all citizens equally regardless of their political value preferences or whether the main effects originate merely from the effects on citizens whose political value preferences match the political value in an emphasis frame. Thus, the next **Subchapter 2.5.3** presents studies that investigated whether value emphasis framing effects are moderated by citizens' political value preferences or not.

2.5.3 Empirical results on the moderation of value emphasis framing effects by citizens' political value preferences

The empirical results discussed in **Subchapter 2.5.2** before suggest that value emphasis frames can effectively influence citizens' issue attitudes. However, **Subchapter 2.4.1** already revealed that many emphasis framing effects are moderated by individual-level moderators and thus, such effect are less total for different citizens than a simple look at main effects suggests. Therefore, this subchapter presents empirical results on moderated (value) emphasis framing effects by exploring citizens' political value preferences as an individual-level moderator to assess how total such effects are for citizens with different strengths of adherence to the political values employed by value emphasis frames. As in the chapters before, the discussion is limited to studies that investigated framing effects on citizens' issue attitude at a single point in time.

Value strength as a moderator

Before exploring the moderating influence of concrete preferences for single political values, the more abstract level of the general moderating influence of citizens' *political value strength* is discussed. Value strength describes how important citizens judge their political value preferences regardless of the direction of these preferences (Beattie & Milojevich, 2017; Slothuus, 2008). For instance, some persons might strongly favor public order over

civil rights, and this specific preference is highly important to them. Others might strongly prefer civil rights to public order, and consider this preference highly relevant. Even though the quality of persons' preference differs and points in opposing directions, both groups are subsumed to have high value strength. In contrast, a third group of persons might hold only weak values, as they are less clear about their preference regarding competing values and this less clear preference is less important to them.

Theoretically, citizens possessing weaker values should be more susceptible to value emphasis framing effects (Slothuus, 2008). Because they are less sure about their most important political values, they are more likely to follow the guidance offered by a frame telling them which relevant political value they should base their specific issue attitude on. In contrast, individuals possessing strong values should be less susceptible to emphasis framing effects, as they are already clear about their preferred values before frame exposure. Thus, to be effective, a value emphasis frame has to change (or reinforce) this already established preference, which is rather unlikely given the general stability of strongly held value preferences (also see **Subchapter 2.5.1**).

Slothuus (2008) empirically investigated the moderating influence of political value strength in his experiment, which was already partly described in **Subchapter 2.2.1**. About two weeks before the experiment, participants rated their preference on egalitarianism, and based on this answer, the author divided respondents into groups having strong values (participants located at the extremes of the scale) or weak values (respondents located in the middle of the scale). During the experiment, all participants were randomly assigned to one of two experimental groups or a control group. Under both treatment conditions, respondents received a news article about a draft of a new social welfare bill proposed by the government. The bill aimed to reduce welfare benefits after the first six months of unemployment. The value emphasis frame of this article varied according to the treatment condition. One group was exposed to a "job frame" constructed around the political value of economic-individualism. The frame emphasized that the bill would function as an economic incentive to search for a new job, which would help unemployed citizens re-enter the workforce and reclaim their destiny. The other group received a "poor frame," which employed the political value of egalitarianism and highlighted that the bill would be unfair and not help reduce unemployment, but increase the number of poor people.

First, the results revealed a main effect of value emphasis framing. Respondents exposed to the job frame favored the implementation of the new bill significantly more strongly than those exposed to the poor frame. In addition, both framing groups differed significantly from those in the control condition. Second, Slothuus (2008) analyzed whether the framing effect worked equally for participants with weak and strong political values. It was found that the value emphasis frames exerted clear effects on citizens with weak values, but no effects on those with strong political values. That is, the value emphasis framing effect was conditioned by value strength and only occurred for participants with rather weak and unclear value preferences.

In addition, Beattie and Milojevich (2017) investigated the influence of political value strength in their framing experiment dealing with the military conflict between the Ukraine and Russian-speaking separatists (also see **Subchapter 2.4.1**). Again, they first found a main effect of value emphasis frames, and three of the four frames changed citizens' issue attitude. The three effective frames were "leftwing-interventionism" constructed around the political value of humanitarianism and favoring of foreign military interventions to ensure universal values everywhere; "rightwing-isolationism" using the political value of economic-individualism, which denied the relevance of helping others and focused on strengthening the economy of one's own countries rather than intervening elsewhere; and "rightwing-interventionism," which also employed economic values but opted to intervene in other countries to ensure the dominance of the national economy of one's own country.

Then, Beattie and Milojevich (2017) tested whether the strength of attitude change through exposure to these frames was more pronounced for citizens with weaker political values regarding foreign policy. The results showed that attitude change was somewhat stronger for citizens with weak political values, although having strong political values did not necessarily inhibit framing effects. Thus, the results of this study corroborate those of Slothuus (2008) insofar that possessing strong political values weakens value emphasis framing effects, but not in that such frames only work when citizens have only weak political values. That is, while value strength is an important moderator for the strength of value emphasis framing effects, it is not always a necessary condition for the effectiveness of such frames.

Value resonance as a moderator of value emphasis framing effects

Alongside the dampening effect of political value strength, studies have also examined the role of *value resonance* (Schemer et al., 2012), sometimes referred to as "value match" (e.g., Nelson & Garst, 2005), as a moderator of value emphasis framing effects. Citizens do not only differ in the strength of their political value preferences, but as shown in **Subchapter 2.5.1**, citizens also differ in which political values they prefer over others. Therefore, when a value emphasis frame draws on a certain political value and emphasizes its relevance in interpreting the issue, this political value can match the political value preference of some persons and mismatch that of other persons. In the former case, the emphasis frame is value-resonant, and in the latter, it is non-resonant. The key question in assessing the strength of value emphasis framing effects (and their implications for rational attitude formation, see next **Subchapter 2.5.4**) is whether the revealed main effects of such frames are the result of only affecting those with matching political values or whether the effects are so total that even citizens with non-matching value preferences are persuaded by value emphasis frames. The former result would indicate that such effects only reinforce preexisting values, whereas the later would imply that value emphasis framing effects are so strong they can override otherwise highly stable political value preferences.

According to the theory, value-resonant emphasis frames should tend to be stronger than non-resonant frames for at least two reasons. First, value-resonant frames rely on

political values that are more chronically accessible to the person, who should have employed the contained values more often in the past to interpret specific issues and events than non-resonant frames (Shen, 2004a). This higher chronic accessibility should increase the likelihood that the value-resonant frame will be activated and then also employed in attitude formation in comparisons to a non-resonant frame, which aims to activate less chronically accessible considerations (Schemer et al., 2012; Shen & Edwards, 2005).

Second, citizens do not form their attitudes based only on the accessibility of considerations, but also based on the perceived applicability of these considerations (see **Subchapter 2.3.1**). Political value preferences likely influence this judgment of applicability, as such preferences generally serve as important criteria to evaluate new incoming information (Blankenship & Wegener, 2011; Verplanken & Holland, 2002). Compared to a non-resonant frame, if an emphasis frame is value-resonant, the frame should be perceived as being aligned with the person's political values and thus, the applicability of the frame should be judged as appropriate in evaluating the political issue framed with this political value. This then should increase the likelihood that the person's attitude follows to a greater extent the attitude direction suggested by the valence of the value-resonant frame than that of a non-resonant frame (A. C. Andrews et al., 2017; Brewer, 2001).

However, it is less clear whether non-resonant value emphasis frames that do not match a person's individual political value preference are entirely ineffective or merely less effective than value-resonant frames. On one hand, value emphasis frames should be at least somewhat culturally resonant (cf. Entman, 1993), as they draw on political values such as humanitarianism, safety, or civil rights that are widely known and cherished among the public. Thus, even though non-resonant value emphasis frames do not trigger the preferred political values at the top of a person's individual value hierarchy, such non-resonant frames still refer to political values that are not easily ignored but contain a certain degree of applicability (also see **Subchapter 2.5.2** before). Thus, non-resonant frames could be influential in affecting citizens' issue attitudes, although to a lesser extent than value-resonant emphasis frames.

On the other hand, it is less likely that a person will form a specific issue attitude that contradicts political value preference, as such preferences are very stable (see **Subchapter 2.5.1**) and highly relevant for a person's political identity (Nelson & Garst, 2005). Thus, when assuming that citizens form attitudes that do not violate their political value preferences, the effects of non-resonant frames should be limited to situations in which citizens are unaware that forming an attitude aligned with a non-resonant value emphasis frame contradicts their preferred political values. This lower awareness, which enables effects of non-resonant frames, should be more pronounced in one-sided situations in which only a non-resonant frame is present.

In contrast, the simultaneous presentation of competing frames with opposing valence, including a value-resonant frame, should inhibit the attitudinal effects of non-resonant frames. This is because such situations should increase a person's awareness that an attitude aligned with the non-resonant frame violates preferred political values.

However, thus far, these are theoretical assumptions regarding the different ways citizens' political value preferences moderate the effects of value emphasis frames. Fortunately, some studies have empirically investigated these questions. These studies are discussed next to determine the exact role of this moderator.

In their experiment dealing with the issue of social welfare, Shen and Edwards (2005) exposed participants to either a "public aid" or "work requirement" value emphasis frame. The former was constructed around the political value of humanitarianism and emphasized the need to provide financial aid to the poor. The latter frame employed the political value of economic-individualism to construct the meaning of social welfare reform and emphasized that welfare recipients should be required to work to gain economic independence. In addition, the authors measured respondents' preference for the political values of humanitarianism and economic-individualism and computed a median split to divide participants having low vs. high preference for humanitarianism and low vs. high preference for economic-individualism.

First, the results demonstrated a main effect of these value emphasis frames on two relevant attitudes, namely supporting strict work requirements and supporting public assistance for the poor and children. For citizens with different political value preferences, participants exposed to the public aid frame were less supportive of strict work requirements and more supportive of financial help for the needy. In contrast, respondents exposed to the work requirement frame supported stricter work requirements more strongly and public aid less strongly.

Next, Shen and Edwards (2005) tested both dependent variables for whether the frame effect interacted with citizens' political value preference. For the attitude toward public aid, no significant interaction was found, implying that the value emphasis framing effect was unmoderated by respondents' preference for the political of value humanitarianism. That is, the value emphasis frames affected citizens equally strongly in their issue attitude regardless of whether the frame was value-resonant or non-resonant.

However, for the second dependent variable, attitude toward work requirements, the authors found a significant interaction between frames and participants' preference for economic-individualism. A closer look at the simple main effects of the frames by the different preferences for economic-individualism revealed that the work requirement frame employing the political value of economic-individualism affected citizens with a high preference for this value more than did the public aid frame. In contrast, this frame effect did not occur for respondents who did not prefer economic-individualism. That is, for the second dependent variable, value resonance moderated the effect of the frames. Moreover, value resonance was a necessary condition for the emphasis framing effect to occur, as there were no effects when the work requirement frame was non-resonant. Based on the results for both dependent variables, this study suggests that value resonance can sometimes be necessary for value emphasis framing effects, but non-resonant frames can sometimes also be equally as effective as value-resonant frames.

Schemer et al. (2012) also analyzed the moderating influence of value resonance in their study mentioned in **Subchapter 2.5.2**. As explained, the authors first conducted a quantitative content analysis of news coverage regarding an initiative in Switzerland that would allow citizens of the municipalities to decide about the naturalization of individual foreigners who could then not sue an appeal process at the courts against the citizens' direct democratic decision. The content analysis revealed three value emphasis frames: two pro frames in favor of the initiative ("people final say" and "mass naturalization") that employed the political values of security, social dominance, and traditionalism and one con frame ("rule of law") that referred to the political values of egalitarianism and humanitarianism.

In a linkage analysis using a two-wave panel survey, Schemer et al. (2012) measured citizens' actual exposure to these frames by asking them about their use of specific media outlets, and then linking this usage to the (differently framed) news content of these outlets. As the central dependent variable, the authors asked citizens for their voting intention on the initiative on a five-point Likert scale, and tested how prior exposure to the pro and con frames influenced this voting intention. As voting intention was measured as the degree of support for the initiative, and the initiative was about a single political issue, the dependent variable is treated here as an indicator of citizens' issue attitude (i.e., support for people's final say on the naturalization of foreigners). In addition, the authors measured respondents' preference for the political value of authoritarianism, which reflects how strongly individuals "adhere to traditional values, tend to denigrate out-groups and minorities, and are submissive to authority figures" (Schemer et al., 2012, p. 341).

Starting with the main effects without considering citizens' political value preferences, Schemer et al. (2012) found that only exposure to the con frame rule of law significantly influenced participants' support for the initiative. The more often they were exposed to this frame, the more likely they were to demonstrate decreased support for the initiative. In contrast, the pro frames did not have an independent main effect on citizens' issue attitude.

The authors then integrated the interactions between frame exposure and respondents' preference for authoritarianism in the models to test the moderating influence of value resonance. They found that the main effect of the value emphasis frame against the initiative remained stable and was unmoderated by value (non-)resonance. Regardless of citizens' political value preference for authoritarianism, increased exposure to the con frame decreased support for the initiative. However, the effects of exposure to the pro frames that constructed the meaning of the issue around the political values of security, social dominance, and traditionalism were significantly moderated by participants' preference for authoritarianism. While the pro frames did not affect the issue attitude of respondents low on authoritarianism, the pro-frames clearly affected those citizens that adhered strongly to the value of authoritarianism. That is, for the pro value emphasis frames, value resonance not only moderated the frame effect but value resonance was also

a necessary condition for this effect, while the con frame was effective regardless of whether this frame was value-resonant or non-resonant.

A. C. Andrews et al. (2017) also investigated the moderating role of value resonance. Unlike previous studies, they examined the effects of value emphasis frames on a specific group, namely domain experts more likely to actively process frames and judge the applicability thereof based on their political value preferences. In an experimental setting with a pre-/posttest design, the authors exposed professional farmers to one of three differently framed news articles on no-till farming, i.e., on a "crop-management system in which agricultural land is undisturbed between harvest and planting" (A. C. Andrews et al., 2017, p. 265). This can prevent farming-induced soil erosion and agricultural runoffs that would otherwise increase environmental pollution.

Each frame emphasized the relevance of a different political value. One group received a "stewardship" frame that employed the environmental value of biospherism and argued that no-till farming increases biodiversity, preserves the long-term productivity of the land, and ensures future generations can also later use the land. Another group was exposed to the "community" frame, which constructed the meaning of no-till farming around the value of environmental altruism, stating that this type of farming reduces environmental pollution through which the health of community members could be ensured. The third group received a "profit" frame that emphasized the value of economic-individualism and focused on the positive economic impacts of no-till farming, explaining that this approach reduces the costs of machinery, fuel, and labor. After exposure to one of these value emphasis frames, the farmers rated their attitude toward no-till farming (posttest attitude).

Directly before participants were exposed to the frames, they responded to this measure (pretest attitude) and answered questions regarding their preferences of the three political values employed in the emphasis frames. As the analyzed farmers were experts on the issue who likely possessed strong prior values, A. C. Andrews et al. (2017) expected that only value-resonant frames would affect their issue attitude by reinforcing their initial attitude, while non-resonant frames would not only be ineffective but lead to contrast effects also reinforcing the initial attitude, despite the opposite valence suggested by the non-resonant frame.

First, the results revealed only marginal attitudinal changes between the pre- and posttest for the three frames. As such, the value emphasis frames did not exert a main effect. The authors then integrated respondents' value preferences in the models, which resulted in a significant interaction between participants' values and value frames for at least one of the three frames. Specifically, the effectiveness of the community frame, which employed the value of environmental altruism, increased the more strongly the farmers favored this value. While the effect of the frame was quite strong for those adhering strongly to the value emphasized by the frame, the community frame did not increase support for farmers who did not favor environmental altruism. Moreover, the authors observed a contrast effect for this frame, wherein the support of farmers strongly against

the value of environmental altruism decreased for no-till farming when exposed to the community frame highlighting this non-resonant value.

Thus, at least for one of the three frames, value resonance not only moderated the effects of value emphasis frames but a lack of value resonance also led to a reversed framing effect. In other words, participants' value preference changed the effect of the frame in the direction of this preference regardless of whether the frame suggested this or the opposite. Therefore, it seems that value preferences can override the effects of value emphasis frames. However, no such effects were evident for the two other frames under investigation. Moreover, priming political value preferences by asking them directly before the framing experiment likely activated these values in an unrealistically strong way, which could explain why following frame exposure was rather ineffective and the influence of value preferences very prominent (also see Verplanken & Holland, 2002 for the effects of prior value activation on message effects).

In addition, Brewer (2001) examined the moderating role of value resonance in an experiment with a pre-/posttest design that dealt with social welfare. The author employed the same humanitarian political value of compassion to frame a planned social welfare reform as either positive or negative (also see Nelson, Lecheler, Schuck, & de Vreese, 2015 for framing the same value for competing political ends). The pro frame emphasized that toughening the welfare system and cutting back financial help for the needy "is ultimately the humane thing to do," whereas the con frame likewise highlighted compassion for the needy but highlighted that cutting back social welfare would "take compassion out of social policy" (Brewer, 2001, p. 54). Before and after exposure to one of these frames, participants rated their issue attitude toward the social welfare reform. They also reported their value preference on compassion (i.e., humanitarianism) in the pretest conducted between one week and two months before the actual experiment. In the posttest, participants rated how compelling (or "strong") they perceived the value emphasis frame they had read before.

The results of this experiment again displayed no main effect of value emphasis frames and revealed citizens' prior issue attitude as the most important predictor of their posttest attitude. In addition, value resonance alone did not produce significant framing effects, and respondents' issue attitude remained unaffected by the frame regardless of whether or not they favored the value of compassion. However, Brewer (2001) did find a significant three-way interaction effect between the pro-frame, value preference for compassion, and how compelling participants judged the pro frame. Specifically, respondents exposed to the pro frame with the value of compassion who considered this frame compelling increased their support toward cutting back social welfare when these respondents preferred the value of compassion. However, when they judged the pro frame as being less compelling, the frame did not increase support for cutting back social welfare, regardless of whether the frame was value-resonant or not. That is, value resonance only increased the effectiveness of the value emphasis frame when the participants judged the use of this value by the frame as appropriate. Put differently, value resonance alone seems to be not always sufficient to reinforce framing effects.

Another study by Nelson and Garst (2005) even suggests that value resonance can hinder the occurrence of value emphasis framing effects by increasing message scrutiny under certain conditions. In a three-factorial experiment, participants were exposed to a political message that opted for the introduction of a mandatory service requirement for senior students to help younger students. In this message, the valence was the same for all conditions. One of two different value emphasis frames was applied to the message. One group received a "humanitarian-egalitarian" value frame emphasizing the relevance of helping others when older students provide services for younger students. The other group was exposed to the "protestant ethic" frame, which highlighted individualistic and meritocratic political values, stating that such mandatory services would "create individual opportunities for individual achievement" (Nelson & Garst, 2005, p. 497). As a second factor, the message referred to a study suggesting that service requirements can either have strong effects or weak positive effects. As such, the second factor manipulated how compelling the message content was for supporting the introduction of mandatory services. As a third factor, the authors measured a few weeks before the experiment respondents' preference for protestant-ethic values and for humanitarianism-egalitarianism. The dependent variable was participants' support for the introduction of mandatory services.

The results revealed no general effect of value emphasis frames on support for the mandatory service, which is unsurprising given that both frames had the same valence and favored such services. Likewise, the general value resonance was ineffective, and respondents supported the mandatory service equally strongly regardless of whether it was framed by a political value they adhered to or not. Nevertheless, a moderating influence of value resonance was evident when considering how compelling the message content was. When respondents read about strong evidence of the positive impact of mandatory services, value-resonant frames increased support for such services more than did non-resonant frames. However, when the message suggested that mandatory services improve the situation at universities weakly, a value-resonant frame for this message decreased support for the mandatory services more than did a non-resonant frame. That is, value-resonance seems to increase the effectiveness of emphasis frames only when the rest of the message content is compelling and does not contradict the direction of the value-resonant frame.

However, considering all empirical findings discussed thus far on the moderating role of value resonance in the effectiveness of value emphasis frames together, it can be concluded that value resonance rather reinforces framing effects. Sometimes, value resonance is a necessary condition for value emphasis frames to influence citizens' issue attitudes at all. However, in other situations, value emphasis frames can also affect citizens for whom the frame is non-resonant. However, the results presented thus far only dealt with one-sided framing situations, although as discussed in **Subchapter 2.4.2**, emphasis framing effects are less pronounced or even non-existent when presenting competing frames simultaneously. Thus, the question arises as to whether value emphasis framing

effects entirely diminish in simultaneous frame competition, i.e., when opposing frames are present, regardless of whether these frames are value-resonant or non-resonant.

Citizens' political value preferences as a moderator in simultaneous frame competition

In the experimental study on the military conflict between the Ukraine and Russian-speaking separatists by Beattie and Milojevich (2017), the authors investigated both the moderating role of general value strength described above and the moderating effects of citizens' value preferences in one-sided and competitive framing situations. Prior to frame exposure, the authors measured citizens' abstract preferences for the political values leftwing-interventionism, leftwing-isolationism, rightwing-interventionism, and rightwing-isolationism employed by the four different frames in the study to construct the meaning of the issue. Then, participants were exposed either to one of these frames or to all four frames simultaneously (also see **Subchapter 2.4.2**). After frame exposure, participants answered four questions on their issue attitude. Each question reflected a certain political action related to one of the four political values but at the concrete level of the military conflict. In other words, the authors constructed for each political value a measure of attitudinal change from respondents' prior and abstract political value preference to a sub-dimension of their concrete issue attitude. As such, the attitudinal change measure showed how strongly respondents' general stance on a political value translated into their preference of this value for the concrete situation of the military conflict and whether frame exposure moved citizens' concrete attitude away from their general political value preference.

When participants were exposed to only one value emphasis frame without simultaneous frame competition, three of the four frames exerted main effects on respondents' issue attitudes, which shifted significantly away from their abstract political value preferences. However, when respondents were exposed to all four frames in simultaneous competition, none of the frames moved citizens' issue attitudes away from their prior value preferences, and the effects of competing frames cancelled each other out. Under competitive framing conditions, respondents' issue attitudes mirrored their prior value orientations. Furthermore, the frames did not reinforce participants' prior abstract values on the level of their concrete issue attitudes or shift citizens away from their initial political values. That is, the study by Beattie and Milojevich (2017) showed that prior political value preferences played a less prominent role in one-sided situations and could not inhibit the effects of value emphasis frames. In contrast, the influence of citizens' political value preferences was much stronger when competing frames were presented simultaneously, which suppressed the effects of single frames.

The two experiments by Sniderman and Theriault (2004), introduced in **Subchapter 2.4.2**, also compared the moderating influence of citizens' political value preferences on value emphasis framing effects in one-sided situations and those with simultaneous frame competition. The first experiment dealt with government spending on the poor using support for such government spending as the dependent variable. One group received the

"higher taxes" value emphasis frame, which constructed the meaning of the issue around the political value of economic growth. A second group was exposed to a "getting ahead" frame that emphasized egalitarian political values as relevant criteria to interpret the issue. A third group received both frames and a fourth group no frames (i.e., the control group). In addition, Sniderman and Theriault (2004) measured citizens political value preference on the dimension egalitarianism vs. economic growth, and based on respondents' answers, the authors divided them into two groups for the analysis: "egalitarians" who preferred egalitarianism over economic growth and "economic growth proponents" who preferred the opposite.

In one-sided framing situations, these value emphasis frames exerted a strong main effect. Respondents supported government spending on the poor significantly more strongly when exposed to the getting ahead frame than when exposed to the higher taxes frame. Moreover, this effect occurred regardless of citizens' value preferences, and both the egalitarian and the economic growth proponents formed significantly different issue attitudes depending on their one-sided frame exposure. Furthermore, when the one-sided frame was value-resonant and matched citizens' value preference, its effect tended to be somewhat stronger than the effect of (still significant) non-resonant frames.

However, when participants were exposed to both frames simultaneously, there were either no or less pronounced effects of emphasis frames. The proponents of economic growth exposed to both frames did not differ from the economic growth proponents in the control group, who were not exposed to any frame. That is, the effects of competitive frames cancelled each other out. Consequently, economic growth proponents mainly followed their political value preference as strongly as they did without any framing, and rather opposed spending on the poor. However, this opposition was significantly less strong in competitive situations than in those in which economic growth proponents were exposed only to their value-resonant frame and strongly opposed spending on the poor. That is, competitive framing led those favoring economic growth to a more middle-of-the-road issue attitude than did "their" one-sided value-resonant emphasis frame higher taxes, which strongly reinforced their initial political value preference to form an attitude against spending on the poor (cf. Sniderman & Theriault, 2004).

For egalitarians, balanced frame competition had a small but significant effect, and these persons were less supportive of spending on the poor when exposed to both frames than those without frame exposure or those exposed to only their value-resonant getting ahead frame. Nevertheless, egalitarians exposed to both frames still supported spending on the poor more strongly than did the economic growth proponents. This means the influence of political value preferences was still strong on the issue attitude of egalitarians under the condition of simultaneous frame competition. However, they were not entirely blind toward the frame of the opposite side, and formed a somewhat more middle-of-the-road opinion than if they had not been exposed to frames and formed an issue attitude based only on their prior political value preference.

Sniderman and Theriault (2004) fully replicated these findings in their second experiment, which framed a planned hate group rally either with the political value of civil rights ("free speech" frame) or with the value of public order ("violent risk" frame). That is, the authors provided strong evidence of three important aspects of the moderating role of political value preferences in value emphasis framing effects. First, one-sided value emphasis frames influence citizens' issue attitude regardless of whether the frame is value-resonant or non-resonant, although one-sided value-resonant frames tend to have somewhat stronger attitudinal effects than non-resonant frames. Second, as one-sided value-resonant frames are most influential, they tend to polarize citizens the most when different groups of citizens with different political value preferences only receive their value-resonant frame. Third, when competing value emphasis frames are presented in simultaneous competition, the effects of the single frames mainly cancel each other out, and citizens form issue attitudes mainly based on their political value preferences, as they would do without any framing. Note though that frame competition can also lead to slightly more middle-of-the-road issue attitudes than when citizens form their attitudes based only on their political value preferences, i.e., without any frame exposure.

While the studies by Beattie and Milojevich (2017) and by Sniderman and Theriault (2004) discussed earlier suggest that citizens mainly stick to their prior political value preferences in situations of simultaneous frame competition and that neither value-resonant nor non-resonant frames strongly influence their issue attitudes, Chong and Druckman (2007a) found that value emphasis frames also exerted considerable effects when presented in competition to each other. **Subchapter 2.4.2** already explained the design of their experiment, which exposed participants to news articles on an urban growth boundary policy that aimed to concentrate the building of new houses in the city center. Besides their general result that strong and compelling emphasis frames affected citizens' issue attitudes not only in one-sided situations but also under conditions of simultaneous frame competition (see **Subchapter 2.4.2**), Chong and Druckman (2007a) also examined whether this result differed between citizens with different political value preferences.

The authors restricted this analysis to the strong frames in their design, as weak frames were generally rather ineffective in influencing citizens' issue attitude. One strong frame was the "preserve open space" frame, which employed the political value of environmentalism to construct the meaning of the issue, arguing that building new houses only in the city center and not its surrounding nature would protect the environment. The strong counter-frame of "economic costs" emphasized the relevance of economic considerations in interpreting the issue and highlighted that prohibiting building of new houses outside the city would increase land prices in the city center, making the newly built houses unaffordable for many people. Respondents were exposed to either the preserve open space frame only, the economic costs frame only, or both frames in simultaneous competition. In addition, Chong and Druckman (2007a) measured participants' political value preference on the dimension of environmentalism vs. economic growth. Based on this measure, the authors divided their sample into "environmentalists" that generally

preferred the protection of the environment to economic growth and "economists," who preferred the opposite. The dependent variable was citizens' attitude toward restricting the building of new houses to the city center.

First, the results revealed that one-sided value emphasis frames influenced environmentalists and economists equally strongly, regardless of whether the frame was a value-resonant frame or non-resonant counter-frame. That is, citizens' political value preference did not moderate the effects of one-sided frames, and even the economists, who generally preferred economic growth to environmental protection, supported the policy when framed as being important in protecting the environment. Moreover, when the environmentalists and economists were only exposed to a non-resonant frame, they did not differ substantially in their issue attitude. However, the environmentalists and economists differed starkly when they only received their respective value-resonant frame, as these frames were as effective as non-resonant frames. Hence, exposure to one-sided non-resonant frames depolarized citizens with different political value preferences, whereas exposure to one-sided value-resonant emphasis frames polarized their issue attitudes along with their prior political value preferences.

When participants received both frames in simultaneous competition, each single frame influenced respondents' support for the urban growth boundary policy, and participants formed a middle-of-the-road attitude. This was in contrast to exposure to only a value-resonant or only a non-resonant frame. This indicates that exposure to competing frames did not prevent framing effects and the effects were not limited to value-resonant frames. In fact, environmentalists supported the policy the most when exposed only to their value-resonant frame preserve open space, less when exposed to both frames simultaneously, and least when exposed only to the non-resonant frame economic costs. Likewise, economists opposed the policy the most when exposed only to their value-resonant frame economic costs, less when exposed to both frames, and least when exposed only to their non-resonant frame preserve open space. That is, when competing frames were present, respondents did not simply choose their side and stay with their value-resonant frame, but they recognized the relevance of the non-resonant frame, forming a middle-of-the-road attitude.

Thus, the study by Chong and Druckman (2007a) showed that citizens' political value preferences did not moderate the effects of single frames when presented in simultaneous competition or as a one-sided frame. Value-resonant and non-resonant frames exerted attitudinal effects in all these situations. That is, these results indicate rather strong value emphasis framing effects that can occur regardless of citizens' political value preferences, even in competitive framing situations in which citizens should know that adjusting their issue attitude based on a non-resonant frame violates their general preference for the political value emphasized by a value-resonant frame.

However, bear in mind that Beattie and Milojevich (2017) and Sniderman and Theriault (2004) did not find frame effects when frames were presented in simultaneous competition. Therefore, the study by Chong and Druckman (2007a) should be rather

considered as an indicator that value emphasis frames can also be effective under frame competition and when they are non-resonant. However, it is more likely that they are ineffective and citizens simply employ their prior political value preferences in attitude formation. Despite the somewhat inconclusive findings regarding the role of political value preferences that sometimes suppress frame effects in competitive situations but other times not, all three studies had comparable results regarding one-sided value emphasis framing, which was effective for both value-resonant and non-resonant frames. This again emphasizes that at least in one-sided situations, value emphasis frames are rather influential and can even affect citizens with non-matching political value preferences, although the effects tend to be somewhat stronger when the frames are value-resonant.

Summary

To sum up, this subchapter showed that citizens' political value preferences can play an important role in the effectiveness of value emphasis framing effects. First, citizens with strong prior political values are less susceptible in terms of basing their attitude formation on the framing of an issue or event. Rather, citizens employ their prior political values to interpret political questions independent of its framing, which underlines the general relevance of political value preferences in attitude formation (also see **Subchapter 2.5.1**). However, second, citizens' concrete political value preferences do not necessarily prevent value emphasis framing effects in one-sided framing situations. In most empirical studies, frames that employed a certain political value to construct the meaning of an issue influenced citizens' issue attitudes. Moreover, such frame effects are not only explained by merely reinforcing the issue attitudes of citizens who generally prefer the political value employed in the frame. Although such value-resonant frames are often somewhat more effective than non-resonant frames, exposure to one-sided non-resonant frames often affects citizens' issue attitudes as well. Third, this tends to change when value emphasis frames are presented in simultaneous competition. In such situations, frames are rather ineffective and citizens mainly form their issue attitude based on their prior political values. However, there is also some evidence that frame competition can lead to middle-of-the-road attitudes, and citizens do not follow only their value-resonant frame when accompanied by a non-resonant counter-frame or stick entirely to their prior values under frame competition. Next, **Subchapter 2.5.4** discusses the implications of these results for assessing citizens' rationality in attitude formation under framing conditions.

2.5.4 Summary and implications for citizens' rationality in attitude formation in light of political value preferences

The last subchapters were concerned with a specific type of emphasis frame, namely value emphasis frames, which employ political values such as egalitarianism, freedom, or public order to construct the meaning of political issues and events. Political values are stable and superordinate conceptions of desirable means and goals related to the fields of politics, society, and public affairs (Goren, 2005; Jacoby, 2006). Citizens adhere to such values to varying degrees; thus, their political value preferences are ordered in a hierarchical structure. When forming specific attitudes, citizens often rely on their political value preference, as these serve as important evaluation criteria to judge political issues and events (see **Subchapter 2.5.1**).

Likewise, political actors and the news media employ political values when constructing the meaning of issues, often presenting value emphasis frames to their audience to influence citizens' attitude formation by suggesting that certain issue positions are appropriate in light of certain political values (see **Subchapter 2.5.2**). Drawing on political values to frame issues or events means drawing on available, accessible, and applicable evaluation criteria shared by most citizens. Thus, the audience cannot easily ignore such frames as important issue perspectives, even if the political value employed by an emphasis frame might not be at the top of a person's individual value hierarchy. For instance, even if a person prefers the political value of civil rights to national security, she or he will likely agree that national security is also an important political goal. As value emphasis frames construct the meaning of issues with such widely cherished political values, they are thought to be particularly influential in influencing citizens' issue attitudes.

Empirical studies that investigated the main effects of value emphasis frames in one-sided situations mainly support this assumption, as the majority of these studies revealed that such frames are effective means by which to substantially influence citizens' issue attitudes (for a summary, see the first lines in **Table 4**). Moreover, **Subchapter 2.5.3** indicated that the main effects in one-sided framing situations did not only result from affecting citizens for who the value emphasis frame was value-resonant. Often, such frames also affected citizens with non-matching political value preferences, although value-resonant frames had stronger effects (again, see **Table 4** for a summary). However, when frames are presented in simultaneous frame competition, single frames are most often ineffective, but citizens mainly base their attitude formation on their prior political value preferences, in a comparable way than they do in situations without frame exposure (also see **Subchapter 2.4.2**).

Table 4. Summary of empirical results for the main effects of value emphasis frames on citizens' issue attitude and for citizens' political value preferences as a moderator of value emphasis framing effects (for frame exposure at t_1)

Investigated type of influence	Result(s) (with reference)
Main effect without investigating moderation by political value preferences	– No main effect of frames (Bechtel et al., 2015; Nisbet et al., 2013) – Main effect of frames (Haider-Markel & Joslyn, 2001; Nelson, 2004; Nelson, Clawson et al., 1997; Nelson & Oxley, 1999; B. T. Scheufele & Gasteiger, 2007) – Main effect of frames when source is credible (Druckman, 2001b)
Moderation by value strength	– Frame effect when weak value preferences, but no frame effect when strong value preferences (Slothuus, 2008) – Frame effects stronger when weak value preferences than when strong value preferences (Beattie & Milojevich, 2017)
Moderation by match between citizens' value preference and value emphasis frame (i.e., value resonance)	– No generally stronger frame effect when value-resonant + stronger frame effect when value-resonant and compelling message content, but weaker frame effect when value-resonant and less compelling message content (Nelson & Garst, 2005) – Frame effect on some attitudes stronger when value-resonant, but no difference in framing effect by value resonance on other attitudes (Shen & Edwards, 2005) – One frame with main effect independent of value resonance, other frame effect only when value-resonant (Schemer et al., 2012) – No main effect of frames, but one of three frames effective when value-resonant + for one frame contrast effect when non-resonant (A. C. Andrews et al., 2017) – No main effect of frames + no frame effect when value-resonant, but frame effect when value-resonant and frame perceived as strong (Brewer, 2001)
Moderation by citizens' political value preferences and by one-sided framing vs. simultaneous frame competition	– When one-sided frames, frame effects move citizens away from prior political value preferences + when balanced frame competition, no effects of single frames, but clear influence of prior political value preferences (Beattie & Milojevich, 2017) – When one-sided frames, frame effects somewhat stronger when value-resonant, but also frame effects when non-resonant + when balanced frame competition, no or less pronounced effects of single frames, but clear influence of prior political value preferences (Sniderman & Theriault, 2004) – When one-sided frames, frame effects independent of value resonance + when balanced frame competition, single frame effects independent of value resonance despite general influence of prior political value preferences (Chong & Druckman, 2007a)

Therefore, relying on the definition of rationality by Tversky and Kahneman (1981), which describes rationality as the stability of preferences that prevents unsubstantiated attitudinal shifts based on the mere emphasis on a certain frame (see **Subchapter 2.2.2**), citizens' rationality in attitude formation differs considerably between situations with only one value emphasis frame and those with simultaneous frame competition.

Exposure to different one-sided value emphasis frames can produce substantially different issue attitudes. Investigating this main effect by citizens' stable political value preferences enables determining whether the attitudinal effects actually violate these preferences. If the main effect is driven by only affecting citizens for whom the respective frame is value-resonant, i.e., in accordance with their political value preferences, these effects would not indicate irrational attitude formation based on framing. For instance, if an environmental value emphasis frame only affects citizens who prefer the value of environmentalism, but not those who prefer economic growth; and if an economic growth frame only influence those who prefer economic growth, but not citizens who prefer environmental political values, then an attitudinal difference between exposure to one of these frames (i.e., a main effect on aggregate) would not be a strong indicator of an irrational attitude formation.

Framing effects limited to value-resonant frames indicate that citizens only change their attitudes when the frame matches their superordinate preferences. That is, they only rely on value emphasis frames that help them form an attitude in accordance with their values. Thus, value emphasis framing would rather ensure that citizens form issue attitudes that do not violate general preferences and thus, such framing effects would indicate a rational attitudinal change to secure the stability of general value preferences. Another question is whether the mere reinforcement of prior values by value emphasis frames would also be functional in the democratic discourse. This could lead to more polarized issue attitudes between citizens with different political values, which might complicate democratic compromises and decision-making. Still, value emphasis framing would at least not lead to arbitrary irrational political attitudes that could distort democratic decisions even more strongly.

However, as **Table 4** shows, the effects of one-sided value emphasis frames are not limited to value-resonant frames. Rather, one-sided emphasis frames often affect the issue attitudes of citizens for whom the frame is a non-resonant counter-frame, although it seems that value-resonant frames can exert somewhat stronger effects. That is, one-sided value emphasis framing can lead to issue attitudes that violate citizens' political value preferences. For instance, an economic growth frame can affect citizens who normally prefer the protection of the environment to economic growth. Thus, they form an issue attitude that supports policies that endanger their preference to protect the environment. Therefore, one-sided framing does not only lead to arbitrary attitudinal shifts based on the mere emphasis of a certain political value, but these shifts even occur regardless of citizens' superordinate value preferences.

This means that one-sided framing effects twice violate rational attitude formation, which is defined as the stability of preferences. The first is at the level of the specific issue attitude, as the preference for the issue attitude itself is not stable but differs depending on exposure to the mere emphasis of a single frame. The second is at the level of the relation between the attitude direction and citizens' superordinate value preferences. Without framing, the formation of specific attitudes relates strongly to citizens' prior political value preferences through which this attitude contributes in a coherent and stable way to their general preferences. However, one-sided frames weaken the relation between value preferences and the specific issue attitude so that the attitude relies less strongly on stable value preferences.

In contrast, in situations of simultaneous frame competition, citizens' attitude formation tends to be rather rational, as single value emphasis frames are most often ineffective in such situations. Here, citizens rely on their prior political value preferences to form their issue attitude. As such, they tend to choose from the different frames the one that serves them best in forming an attitude aligned with their stable political value preferences, as they would do without frame exposure. Moreover, some evidence shows that this occurs without reinforcing the influence of their prior political values, as it can occur with one-sided value-resonant frames. Thus, in situations of simultaneous frame competition, citizens tend to form attitudes that reflect their prior political values in a more stable manner than in situations with one-sided value-resonant frames. A one-sided value-resonant framing situation can move citizens' issue attitudes more strongly to their preferred political value than they prefer this value without framing. Thus, competitive framing leads not only to attitudes that are more rational than the attitudes formed in one-sided situations but also to less polarized attitudes than one-sided value-resonant framing.

Therefore, the effects noted in the literature seem to suggest that one-sided value emphasis framing can lead to irrational and arbitrary issue attitudes, while the simultaneous presentation of competing value emphasis frames prevents citizens from forming irrational issue attitudes (but see **Subchapter 2.8.1** for why even the effects found for non-resonant one-sided emphasis frames do not necessarily imply irrational attitude formation because of a methodological confounding in the employed stimuli). However, in reality, exposure to competing frames does not only occur simultaneously. Often, citizens are first exposed to one frame for an issue and after some time delay, to one or more opposing frames. This means that frame competition can also take place over time in the form of exposure to different one-sided emphasis frames at different points in time. Thus, an important remaining question is whether asynchronous frame competition likewise prevents irrational attitude formation or whether first being exposed to one frame and later in time to a counter-frame leads to arbitrary attitude formation at each single point of frame exposure. Thus, the next **Chapter 2.6** provides the results on emphasis framing effects over time by examining asynchronous frame competition (see **Subchapter 2.6.3**) as well as the general durability of emphasis framing effects (**Subchapter 2.6.1**) and the effects of frame repetition over time (**Subchapter 2.6.2**).

2.6 Emphasis framing effects over time

2.6.1 Empirical results for the durability of emphasis framing effects over time based on single frame exposure

The literature has examined the variable *time* in the process of emphasis framing effects in three different ways. First, empirical studies investigated how durable or persistent such effects are over time when citizens are only exposed once to a one-sided emphasis frame. Such studies enable drawing conclusions regarding whether emphasis framing effects are short term and diminish a few days after frame exposure. This would render the existence of these effects less consequential in the long term. Furthermore, conclusions can be drawn regarding whether these effects lead to durable attitudinal changes that persist for longer periods of time, which would thus be highly consequential. Second, empirical studies examined whether repeated exposure to the same emphasis frame over time not only strengthens the durability of framing effects, but also increases their effectiveness. In reality, citizens' exposure to a certain frame for a certain political issue is seldom limited to a single point in time, as has been the case in the experiments discussed in previous chapters. However, exposure to the same frame can be more frequent over time, as citizens are typically exposed more frequently to the news media. Thus, studies on repetitive frame exposure enable a more realistic look at the long-term effects of emphasis frames employed constantly by political actors to offer the audience certain issue interpretations (see **Subchapter 2.5.2**). Third, studies have investigated asynchronous frame competition over time, as it often occurs in public debates in which an actor might have the opportunity to set her or his frame in the debate first. However, in the following days and weeks, competing actors present their counter-frames to the audience as well. Such studies more realistically examine how exposure to different one-sided emphasis frames at different points in time changes (or does not change) initial emphasis framing effects.

This subchapter presents empirical results for the *general durability* of emphasis framing effects over time *based on single (one-sided) frame exposure*. As mentioned, the presentation in this subchapter and those following is limited to empirical studies (but see e.g., Baden & Lecheler, 2012 for a theoretical account of emphasis framing effects over time and the role of citizens' political knowledge in this process). Moreover, the subchapters only include studies that investigated emphasis framing effects as defined in **Subchapter 2.1.2**, i.e., as effects of exposure to emphasis frames on citizens' issue attitude as the main dependent variable.

Durability of emphasis framing effects without considering individual-level moderators

One of the first studies to examine the longevity of emphasis framing effects was conducted by Druckman and Nelson (2003), and was introduced partly in **Subchapter 2.3.3**. The authors exposed participants to one of two frames highlighting different perspectives of a campaign finance reform that aimed to restrict the financial influence of unions,

corporations, and individuals on political party campaigns. One group received a "free speech" emphasis frame stressing the right of corporations and unions to support parties that act in their interest, and the other group received a "special interests" frame highlighting the necessity of restricting the influence of powerful lobbies on the political process. Directly after frame exposure (t_1), Druckman and Nelson (2003) measured participants' issue attitude toward the campaign finance reform. They found that respondents exposed to the free speech frame opposed the reform significantly more strongly than did participants exposed to the special interests frame. Ten days after the experiment (t_2), respondents were asked in a follow-up survey to express their attitude toward the reform again without again exposing them to one of the emphasis frames.

The results revealed that the initial framing effect found at t_1 diminished at t_2. Respondents exposed to the free speech frame ten days before no longer opposed the reform significantly more strongly than participants who received the special interests frame ten days before. There was, however, at least a slight descriptive difference in support at t_2 based on prior frame exposure at t_1. Thus, this study suggests that emphasis framing effects are rather short term and do not persist over longer periods of time.

This result is corroborated by the study by Tewksbury et al. (2000) mentioned earlier in **Subchapter 2.4.1**. Again, the authors found initial effects for one-sided emphasis frames based on first frame exposure (but see **Subchapter 2.4.2** for the non-significant frame effects in this study when competing frames were presented simultaneously). Specifically, respondents exposed to the one-sided "environment" frame emphasizing the negative outcomes of factory farming for the environment opposed large hog farms significantly more strongly directly after frame exposure (t_1) than did the participants who received the "industry" frame, which highlighted the economic benefits of larger farms. Three weeks later (t_2), Tewksbury et al. (2000) measured respondents' issue attitude again without providing any additional frame exposure in the questionnaire.

They found that the issue attitude of the groups exposed to the different one-sided emphasis frames at t_1 no longer differed three weeks after frame exposure (t_2). However, at least a still significant but substantially weaker frame effect was evident at t_2 for a further dependent variable that did not directly measure respondents' attitude toward larger hog farms, but their support for the regulation of such hog farms. That is, while the study did not find persistent emphasis framing effects, it showed at least that emphasis framing effects must not diminish entirely after three weeks.

Lecheler, Keer et al. (2015) also examined the durability of emphasis framing effects by examining three points in time. Their experiment dealt with an initiative that proposed higher financial investments in care for the elderly. At the beginning of the study, participants were exposed to either a one-sided "positive" frame that emphasized how more investment would improve the situation of the elderly or to a one-sided "negative" frame highlighting unfavorable outcomes of higher investment in elderly care. Directly after frame exposure (t_1), the authors found a significant frame effect. Respondents who received the

positive frame supported the initiative significantly more strongly at t_1 than participants exposed to the negative frame.

Two weeks later (t_2), Lecheler, Keer et al. (2015) again measured respondents' issue attitude without any further experimental exposure to one of the frames, yielding two relevant results. First, the attitude of respondents exposed to the positive frame two weeks before was significantly weaker at t_2, i.e., this initial framing effect weakened over time. Second, this weakened effect led to the disappearance of the framing effect at t_2 between the two experimental groups exposed to the different frames at t_1. Two weeks after frame exposure (t_2), respondents who received the positive frame no longer supported more strongly higher investment in elderly care than did those exposed to the negative frame. Moreover, Lecheler, Keer et al. (2015) investigated how the emphasis framing effect developed six weeks after (one-sided) frame exposure (t_3). The results were similar as those for t_2, and the initial framing effect observed at t_1 was non-existent six weeks later (t_3). That is, this study adds evidence for rather short-term framing effects that tend to disappear after two weeks without emerging again later in time (e.g., after six weeks) when not repeated (but see next **Subchapter 2.6.2** for how frame repetition changed this pattern in this same study).

Durability of emphasis framing effects when considering individual-level moderators

While the aforementioned studies did not find durable emphasis framing effects over time based on single (one-sided) frame exposure, Chong and Druckman (2010) argue that the durability of such effects depends on how citizens form their issue attitude during or directly after frame exposure, i.e., at t_1. Thus, the authors introduced the moderator *type of attitude formation* that influences *the strength of the formed attitude* to explain when emphasis framing effects are more or less persistent.

Hastie and Park (1986) broadly distinguish two types of attitude formation. *On-line attitude formation* takes places directly during the processing of incoming information. The person judges single pieces of information during exposure and integrates them into his or her overall attitude. As the evaluation of information takes place directly, actively, and consciously, the formed summary attitude tends to be held with stronger attitude certainty, meaning that on-line attitude formation leads to rather high attitude strength (Bizer, Tormala, Rucker, & Petty, 2006; Chong & Druckman, 2010). Then, this strong overall attitude is stored in a person's memory, and often, the person forgets the single pieces of information contained in a message that formed the summary attitude. When asked to report his or her attitude, the person retrieves this overall attitude from memory without reconstructing the single pieces of information that once formed this attitude.

In contrast, *memory-based attitude formation* takes place when a person is asked about her or his attitude, but not directly when processing incoming information. During exposure to a message, the person stores single pieces of information in the memory, and when asked about his or her attitude, the person retrieves all accessible single pieces of

information about the attitude object from the memory, constructing the attitude based on these retrieved considerations. Such memory-based attitudes tend to be weaker, as attitude formation rather depends on currently accessible information and is less the result of a conscious and active process of evaluating incoming information (Bizer et al., 2006; Chong & Druckman, 2010).

As attitudes of different strength are formed, Chong and Druckman (2010) postulated that emphasis framing effects diminish to different degrees of strength over time depending on how a person formed his or her attitude directly after frame exposure (i.e., at t_1). When the issue attitude formed at t_1 is an on-line attitude and thus a rather strong attitude, it is more likely that this attitude is stable over time and does not diminish at t_2, as strong attitudes tend to be generally less susceptible to change. In contrast, when the formed attitude at t_1 is memory-based and therefore weaker, it is less persistent over time. This is because the later recall at t_2 of earlier incoming single pieces of information tends to be imperfect and can omit information that may have been relevant when forming a memory-based attitude at t_1, when this information was more easily accessible (Chong & Druckman, 2010).

To test these assumptions, Chong and Druckman (2010) conducted an experiment on the so-called Patriot Act, a new law that allowed the US government to more extensively surveil citizens' communication behavior. As the dependent variable, the authors measured citizens' support for the law at two points in time. First, respondents' issue attitude was measured directly after frame exposure at t_1 and second, ten days after frame exposure (t_2) without any additional frame exposure (but see **Subchapter 2.6.3** for how this design also manipulated frame competition at t_2 in additional experimental groups that are not of interest in this subchapter but are presented later). Directly before t_1, two experimental manipulations took place. First, respondents received either a "civil rights" value emphasis frame that highlighted the problematic consequences of increased surveillance for citizens' right to privacy, or a "terrorism" frame emphasizing that the new law prevents terrorist attacks and increases citizens' security.

Second, Chong and Druckman (2010) manipulated the type of attitude formation participants employed to form their issue attitude at t_1 on three levels. The first level prompted respondents to form an on-line attitude. They were told to evaluate each single statement in the stimulus separately in terms of how strongly it influenced their overall attitude, and that they would be asked about their overall attitude again ten days later. The second level did not tell participants they would be asked again for their attitude. In contrast, they were instructed to rate the statements by judging how dynamic and active their language was to distract them from forming a direct overall issue attitude during frame perception. This ensured they formed a memory-based attitude when asked for their issue attitude at t_1 directly after frame exposure. The third level contained no instruction for respondents on how to process the information in the stimulus and thus, represented non-manipulated attitude formation.

For initial emphasis framing effects at t_1, Chong and Druckman (2010) found clear effects of one-sided emphasis frames regardless of the type of attitude formation. At t_1, exposure to the terrorism frame always led to significantly stronger support for the surveillance law than did exposure to the civil rights frame, regardless of whether the attitude formed at t_1 was memory-based, on-line, or non-manipulated. However, ten days later, at t_2 without any further experimental frame exposure, the type of attitude formation at t_1 moderated the stability of the initial emphasis framing effect.

When the attitude at t_1 was memory-based or non-manipulated, the initial framing effect found at t_1 significantly decreased at t_2, and attitudinal differences between respondents exposed to different one-sided frames at t_1 diminished at t_2. In other words, there was no durable emphasis framing effect ten days after an initially effective single (one-sided) frame exposure when participants formed a memory-based attitude or non-manipulated attitude during frame exposure.

In contrast, when respondents formed an on-line attitude during frame exposure at t_1, their issue attitude did not change ten days later (t_2); thus, the initial emphasis framing effects for participants exposed to different frames at t_1 remained stable at t_2 without any further experimental frame exposure. Through this, Chong and Druckman (2010) supported their assumptions with empirical evidence, finding that emphasis framing effects based on single (one-sided) frame exposure are rather durable over time as long as citizens form an on-line issue attitude during initial frame exposure.

The role of individual-level moderators in the general durability of emphasis framing effects was also examined by Lecheler and de Vreese (2011), who investigated the additional influence of citizens' political knowledge. **Subchapter 2.4.1** noted already that political knowledge can moderate the effects of initial frame exposure, although the exact moderating role of this variable remains unclear. Lecheler and de Vreese (2011) asked in their study whether the durability of emphasis framing effects based on single one-sided frame exposure is more pronounced when citizens possess moderate levels of political knowledge than low or high levels of knowledge.

The authors argued that citizens with low knowledge are likely affected by initial frame exposure, but less able to integrate the offered connection between the frame and the issue in their long-term memory. Thus, emphasis framing effects should decrease more strongly over time for such citizens. Likewise, people with high political knowledge likely display short-term framing effects. Even though they have sufficient ability to store the learned connection between the frame and the issue in their mental stockpile, they "are also more likely to resist integration of a news frame, or to quickly relapse to their broad stock of available considerations" (Lecheler & de Vreese, 2011, p. 966). In contrast, citizens with medium levels of political knowledge likely resist less the integration of the connection between the issue and the frame in their long-term memory, as they possess less competing considerations that might prevent this integration, but enough knowledge to store the connection in their cognitive structure in a meaningful and persisting way. Thus, the authors

expected the most durable emphasis framing effects for citizens with moderate levels of political knowledge.

To test their assumptions, Lecheler and de Vreese (2011) conducted an experiment and measured citizens' issue attitude toward enlargement of the European Union at four points in time. The first measurement took place immediately after exposure to a one-sided frame (t_1): either a "pro" frame emphasizing the potential positive consequences of the enlargement or a "con" frame focusing on potential negative outcomes. In addition, respondents completed a political knowledge test, and based on the result thereof, participants were categorized as having low, moderate, or high political knowledge. The authors then re-measured respondents' issue attitude one day (t_2), one week (t_3), and two weeks (t_4) after initial frame exposure without exposing participants again to the frames at later points in time.

For the participants on average without considering their different levels of political knowledge, the results revealed an emphasis framing effect at t_1 directly after frame exposure. Respondents exposed to the pro frame supported the enlargement of the European Union significantly more strongly than those exposed to the con frame. This effect between the experimental groups persisted one day later (t_2), one week later (t_3), and two weeks after frame exposure (t_4). In the groups, the issue attitude of respondents exposed to the con frame remained stable over time. In contrast, the frame effect weakened after one week (t_3) for participants who received the pro frame at t_1, but this group still differed significantly at t_3 and t_4 from the group exposed to the con frame and from the control group without any frame exposure.

Next, Lecheler and de Vreese (2011) tested whether the persistence of the frame effect differed between citizens with different levels of knowledge. Directly after exposure to one of the one-sided frames at t_1, political knowledge did not moderate the frame effect, and the effect was present regardless of whether respondents possessed low, moderate, or high political knowledge. This pattern persisted one day (t_2) and one week (t_3) after frame exposure. However, two weeks after frame exposure (t_4), the framing effect diminished for participants with low knowledge, weakened when political knowledge was high, and only persisted at about the same magnitude when respondents had moderate political knowledge. That is, Lecheler and de Vreese (2011) found partial support for their assumption that emphasis framing effects are more persistent for citizens with moderate levels of political knowledge, particularly over longer time periods. However, more relevant seems to be that their study found generally rather durable emphasis framing effects over time based on single frame exposure, even for citizens with different levels of political knowledge. This contradicts to some degree the results of aforementioned studies that found less persistent effects on average.

Summary

In sum, this subchapter showed that emphasis framing effects tend to be rather short term when citizens are exposed only once to a one-sided emphasis frame in an experimental

setting. While such frames lead to substantial attitudinal effects directly after frame exposure, these effects often decrease over time, becoming insignificant a few days later. However, some studies found durable emphasis framing effects up to two weeks after frame exposure, especially when citizens formed their initial attitude on-line and therefore, with higher attitude strength, or when citizens had moderate but not overly high political knowledge to integrate the connection between the frame and the issue into their mental stockpile. Still, emphasis frames tend to be rather unstable over time when no additional criteria at the individual level are met. Thus, such effects seem – at an aggregate level – rather inconsequential over time. However, in reality, it is reasonable to assume that citizens are not solely exposed once to an emphasis frame for an issue, but repeatedly receive the same frame over time. Therefore, the next **Subchapter 2.6.2** explores empirical studies that investigated whether frame repetition over time produces more durable emphasis framing effects.

2.6.2 Empirical results for the influence of frame repetition over time on the durability and strength of emphasis framing effects

In the research on general persuasion, message repetition has long been a key factor in explaining both the durability and the strength of attitudinal message effects. The mere exposure effect posits that the more often a message is repeated, the more favorable becomes the attitude toward the message (Zajonc, 1968) and the better is the recall of the message's content (Cacioppo & Petty, 1979). This holds as long as the repetition of a message does not bore citizens (Bornstein, Kale, & Cornell, 1990) or leads to increased reactance toward the message (Miller, 1976), as this can create an inverted-U relationship between repetition and message favorability (Cacioppo & Petty, 1979). Given the possible strengthening effect of general message repetition, empirical studies have examined whether *frame repetition*, i.e., repeated exposure to the same emphasis frame over time, leads to stronger and more durable emphasis framing effects.

For instance, Lecheler, Keer et al. (2015) not only investigated the general durability of emphasis framing based on single frame exposure (see **Subchapter 2.6.1** before) but also examined the influence of frame repetition. In doing so, the authors exposed participants not only once to either a "positive" or "negative" frame for the issue of elderly care, measuring citizens' issue attitude directly after frame exposure (t_1). For some participants, the authors repeated exposure to the same frame four times in total: one day later (t_2), one week later (t_3), and two weeks later (t_4). Lecheler, Keer et al. (2015) then re-measured citizens' support for financial investment in care for the elderly directly after the last frame exposure, i.e., two weeks after initial frame exposure (t_4), and four weeks after the exposure, i.e., six weeks after initial frame exposure (t_5).

The results indicated an emphasis framing effect directly after initial frame exposure at t_1 and that participants who received the positive frame supported the issue significantly more strongly than those exposed to the negative frame. As reported in **Subchapter 2.6.1**,

this effect entirely diminished after two weeks (t_4) and after six weeks (t_5) when there was no repeated exposure to the same frame at t_2, t_3, and t_4. However, when there was frame repetition, the emphasis framing effect persisted two weeks (t_4) and six weeks (t_5) after initial frame exposure between groups exposed to the different frames. Here, at both measured points in time after first frame exposure, repeated exposure to the positive frame led to a significantly more favorable attitude toward care for the elderly than repeated exposure to the negative frame. This implies that frame repetition leads to durable emphasis framing effects over time.

Moreover, Lecheler, Keer et al. (2015) analyzed whether the framing effect strengthened over time by comparing the development of the effect over time in each single group with repeated exposure to the same frame. For the positive frame, repetition did not increase the initial framing effect at later points in time. While respondents exposed to the positive frame supported financial investment more strongly than participants exposed to the negative frame directly after the first frame exposure (t_1), this support did not increase or decrease two weeks (t_4) or six weeks (t_5) later, despite that the positive frame was repeated three times (t_2, t_3, and t_4). In contrast, the group exposed repeatedly to the negative frame displayed significant variation over time. Directly after the fourth exposure to the negative frame, i.e., two weeks (t_4) after initial frame exposure, respondents opposed financial investment in elderly care even more strongly than directly after first frame exposure (t_1). Thus, frame repetition reinforced the initial framing effect two weeks later. However, the reinforcement effect induced by frame repetition disappeared four weeks after the last frame exposure (t_5) and no longer differed from the framing effect directly after frame exposure (t_1). This suggests that frame repetition strengthened the effect of the negative frame directly after the last frame exposure, but only led to a persistent, i.e., no longer strengthened, framing effect four weeks after last frame exposure.

Finally, Lecheler, Keer et al. (2015) examined whether citizens' political knowledge moderated the strength and/or durability of emphasis framing effects based on frame repetition. The results showed only limited differences between participants with different levels of political knowledge regarding possible strengthened initial frame effects directly after the last repetition of the same frame (t_4). However, political knowledge moderated the persistence of the frame effect four weeks (t_5) after the fourth and last exposure to the same emphasis frame. While there was a persistent framing effect at t_5 on aggregate, decomposing this effect by political knowledge indicated that this effect stemmed from affecting citizens with moderate levels of political knowledge. In contrast, the initial framing effect did not persist at t_5 when political knowledge was low or high. That is, the long-term effects of frame repetition depended again on some but not too much political knowledge, as was the case in the study by Lecheler and de Vreese (2011) who obtained the same results for the general durability of emphasis framing effects based on single frame exposure (see **Subchapter 2.6.1**). In sum, the study by Lecheler, Keer et al. (2015) revealed that frame repetition did not lead to stronger emphasis framing effects in the long term, but to more

durable initial framing effects over time, particularly when citizens had moderate levels of political knowledge.

Using a somewhat different experimental design, Lecheler and de Vreese (2013) also examined the general influence of frame repetition and moderating role of political knowledge. Their study also considered five different points in time, but repeated exposure to the same frame only once. First, all participants answered questions on their political knowledge and were exposed either to an "opportunity" frame emphasizing the potential benefits of an enlargement of the European Union or to a "risk" frame, which highlighted the potential negative consequences thereof. Immediately after initial frame exposure (t_1), the authors measured respondents' attitude toward an enlargement of the European Union. Either 15 minutes (t_2), 1 day (t_3), 1 week (t_4), or 2 weeks (t_5) after initial frame exposure, participants were again exposed once to the same frame, and their issue attitude was re-measured directly afterwards (this study also included additional conditions that investigated competitive framing over time, see next **Subchapter 2.6.3**).

On aggregate, for all levels of citizens' political knowledge, the results revealed a clear initial emphasis framing effect immediately after first frame exposure (t_1). Respondents exposed to the opportunity frame supported the enlargement of the European Union significantly more strongly than those who received the risk frame. When respondents were again exposed to the same emphasis frame later in time, the initial framing effect did not change but remained persistent at the same magnitude as at t_1, regardless of whether frame repetition took place 15 minutes (t_2), 1 day (t_3), 1 week (t_4), or 2 weeks (t_5) after initial frame exposure. As such, on aggregate, a durable but not strengthened emphasis framing effect due to frame repetition was evident.

Next, Lecheler and de Vreese (2013) investigated whether citizens' political knowledge moderated the persistence and strength of the framing effect over time. However, they limited their analysis to a comparison between lower and higher levels of political knowledge because of a sample size too low to analyze more than two knowledge groups. The authors found that frame repetition strengthened the initial framing effect when political knowledge was high, but not when it was low. However, this strengthened effect on participants with high knowledge only occurred when the same frame was repeated one day (t_3) or one week (t_4) after initial frame exposure but not when frame repetition took place two weeks after the first exposure (t_5). That is, when the delay between first and second frame exposure was rather short, frame repetition boosted the initial framing effect for citizens with a high level of political knowledge, but not when there was a longer delay before the same frame was repeated. Thus, these results provide evidence comparable to the study presented before: Frame repetition prevents the decay of emphasis framing effects over time and leads to persistent attitudinal differences based on frame exposure, but without reinforcing initial framing effects in the long term.

Using different methodology, Matthes (2008) analyzed the influence of repeated frame exposure over time in Germany (also see Matthes, 2007b, pp. 189–302). Unlike the studies mentioned previously, he did not perform an experiment, but conducted a two-

wave linkage analysis that combined citizens' exposure to differently framed real news content on the issue of unemployment with respondents' attitude toward the government's performance in fighting unemployment. To detect emphasis frames in news coverage on unemployment, Matthes (2008) conducted a quantitative content analysis of various news media over four-month period by coding single frame elements. These were then clustered into broader emphasis frames based on a latent class analysis, which revealed two main frames. The government-friendly "Hartz" frame emphasized the potential positive influence of the government's labor market reform on reducing unemployment (named after Peter Hartz who proposed the labor market reform the German government implemented in the early 2000s). In contrast, the "opposition" frame highlighted that the reform would not reduce unemployment, and the frame made the government and its actions responsible for a high unemployment rate in the country.

In addition to the content analysis, the author conducted a two-wave panel survey measuring respondents' use of different media outlets in the last two months before the respective panel wave and participants' attitude toward the government in terms of its performance in fighting unemployment. Moreover, participants reported their attitude strength, which was used as an indicator for whether the attitude formed toward the government was memory-based (i.e., held with low strength) or on-line (i.e., held with high strength; see **Subchapter 2.6.1** for a longer explanation of different types of attitude formation and also see Matthes, 2007a; Matthes, Wirth, & Schemer, 2007). The second wave (t_2) took place two months after the first wave (t_1). Based on respondents' reported exposure to various news media outlets, they were each assigned an impact value for each frame reflecting how often they were exposed to one of the two emphasis frames in the used news outlets in the two months prior to each panel wave (t_0-t_1 and t_1-t_2). In this way, the study could measure respondents' actual frame exposure in the two months before they reported their attitude on the government at t_1, enabling testing initial emphasis framing effects at t_1. At t_2, it could be tested whether repeated exposure to the same frame in the two months between t_1 and t_2 increased the strength of the initial effect of the same frame.

Matthes (2008) analyzed the emphasis framing effects at t_1 and t_2 separately for citizens who formed a memory-based attitude at t_1, i.e., for respondents with weak attitude strength, and for participants who formed an on-line attitude at t_1, i.e., for those with high attitude strength. He separated the analyses because he expected initial and repeated emphasis framing effects of different strength for the different groups. Specifically, he argued that respondents who formed memory-based attitudes drew on the increased accessibility of the emphasis frame to which they were predominantly exposed to before. Thus, these participants may be rather susceptible to emphasis framing effects at t_1 and after repeated exposure to the same frame later in time at t_2. In contrast, when respondents formed an on-line attitude, the attitude may have been less likely to change over time, as the initial attitude was held with high strength, leading to generally higher attitude persistence (cf. Krosnick, Boninger, Chuang, Berent, & Carnot, 1993).

For citizens with memory-based attitude formation, the results showed a significant initial framing effect at t_1 for a predominant exposure to the "Hartz frame" in the two months before (t_0-t_1). The more frequently participants were exposed to this frame, the more favorable was their attitude toward the government. Two months after t_1 at t_2, repeated exposure to the Hartz frame between t_1 and t_2 had an additional effect on participants who formed a memory-based attitude. That is, the strength of the initial framing effect at t_1 increased at t_2, and respondents who received again predominantly the Hartz frame prior to t_2 supported the government even more strongly than at t_1. However, predominant exposure to the opposition frame prior to t_1 felt short of significantly influencing respondents' attitude, although the effect size was comparable to the Hartz frame (although, in the opposite direction). At t_2, however, repeated predominant exposure to the opposition frame in the two months before (t_1-t_2) significantly affected respondents' attitude. That is, while exposure to this frame was not sufficient for a significant framing effect at t_1, repeated predominant exposure to the frame in the following two months (t_1-t_2) enabled the frame to exert a significant attitudinal influence at t_2.

Moreover, Matthes (2008) tested whether the framing effects on respondents with memory-based attitude formation were more pronounced when only investigating their short-term exposure prior to the measurement of their issue attitude, i.e., in situations where short-term accessibility would be rather high. However, no (or less) framing effects were evident at t_1 or at t_2 when only investigating frame exposure one week, two weeks, three weeks, or four weeks prior to assessing respondents' attitude (also see Matthes, 2007b, pp. 284–288). Even though participants formed memory-based attitudes, they had to be exposed long enough (i.e., two months) to the same frame, as only this enabled the frame to increase its accessibility, which respondents could then use to form their attitude.

While frame repetition over longer time periods influenced the attitudes of participants who formed memory-based attitudes, no effects of initial (t_1) or repeated (t_2) predominant frame exposure were found for respondents with an on-line attitude at t_1. Thus, it seems that these participants had already formed their on-line attitude before the first exposure phase (t_0-t_1); therefore, predominant exposure to a certain frame did not change this attitude at t_1 and neither did repeated predominant exposure to the same frame (t_1-t_2) at t_2. As such, the study by Matthes (2008) showed on one hand the insignificance of emphasis framing when citizens' already possess strong prior attitudes that cannot be changed through repeated frame exposure over four months in total. On the other, when citizens did not have a strong prior attitude on the issue and thus formed memory-based attitudes, exposure to a certain emphasis frame affected their attitude and repeated exposure to the same frame even strengthened the initial effect. Therefore, frame repetition can lead to not only durable but also strengthened emphasis framing effects over time, as long as such frames do not compete against strong prior on-line attitudes.

Summary

Based on the results regarding the influence of long-term frame repetition, this subchapter showed that repeated exposure to the same frame over time can stabilize initial emphasis framing effects and lead to the durability of such effects of up to four weeks after the last frame repetition. While **Subchapter 2.6.1** has revealed that emphasis frames tend to be short term when citizens are exposed only once to a one-sided emphasis frame, this subchapter provided evidence that repeated frame exposure to the same frame over time can produce durable attitudinal effects of emphasis frames. Thus, in situations of frame repetition, emphasis framing effects can be consequential in the long term and do not easily disappear. Moreover, frame repetition does not only stabilize initial emphasis framing effects but at least for some citizens, repeated frame exposure can reinforce initial framing effects, which strengthens these effects over time, particularly when attitude formation is memory-based or when a person possesses high political knowledge. This suggests that emphasis framing is not a communicative tool that only produces short-term effects. Rather, when such frames are repeated over time, persisting and sometimes even increasing attitudinal differences can arise for citizens repeatedly exposed to one emphasis frame and those citizens who frequently receive another frame.

However, in an ideal democratic public sphere, (repeated) exposure to only one emphasis frame for an issue is rather unlikely. Citizens typically receive various competing frames for an issue from various political actors competing in the public arena. **Subchapter 2.4.2** already showed that simultaneous frame competition often cancels out emphasis framing effects, which implies that the power of single emphasis frames is rather limited in the more realistic scenario of frame competition. Still, the question remains as to whether frame competition also limits the effects of single emphasis frames when citizens do not receive competing frames simultaneously, but first a one-sided frame and after some time delay, a one-sided counter-frame. To address this, the next **Subchapter 2.6.3** presents empirical results regarding asynchronous frame competition over time.

2.6.3 Empirical results for the durability of emphasis framing effects over time based on asynchronous frame competition

When political actors compete for public support for their issue positions by employing emphasis frames, this frame competition typically takes place over longer cascades of time (Entman, 2004; Entman, Matthes, & Pellicano, 2009). When new political issues enter the public agenda, there is often one political camp that is able to set the first frame for an issue, which might influence citizens' issue attitudes. Political opponents may need some time to decide how to re-frame a debate. However, after a few days or weeks, political opponents typically start offering their frames to the audience to influence citizens' issue attitudes in the opposite direction. That is, much of the framing processes in real political communication take place as *asynchronous frame competition*, sometimes also referred to as

"diachronic" frame competition (e.g., Matthes & Schemer, 2012), in which citizens first receive one frame (t_1) and later in time an opposing counter-frame (t_2).

Besides the high realism of asynchronous frame competition, empirical studies investigated the phenomenon because the time delay between exposures to competing frames might lead to different outcomes than simultaneous frame competition. As described in **Subchapter 2.4.2**, empirical results mainly suggest that simultaneous frame competition cancels out the effects of single emphasis frames. However, asynchronous frame competition implies that each single situation of frame exposure is one-sided, and only the situations together add up to exposure to competing frames. Thus, the outcome of asynchronous frame competition could be in sum the same as that in simultaneous competition. While the first frame might affect citizens' issue attitude, the counter-frame presented later influences them to the same magnitude but in the opposing direction, through which the effects of the single frames cancel each other out in the long term.

However, the outcome of asynchronous frame competition may also differ from that of simultaneous frame competition. On one hand, the first frame exposure could lead to a persistent emphasis framing effect immune to the delayed exposure to a counter-frame (i.e., a *primacy effect*), as an attitude formed once might resist later persuasive attempts (Chong & Druckman, 2010; Lecheler & de Vreese, 2013). On the other, **Subchapter 2.6.1** showed that initial framing effects often diminish after a few days (especially when not repeated, see **Subchapter 2.6.2**). Thus, possibly, initial framing effects of one-sided frame exposure at t_1 reverse in the direction of the later presented counter-frame at t_2, and in sum, only the later frame affects citizens' issue attitude in the form of a *recency effect* (Chong & Druckman, 2010; Lecheler & de Vreese, 2013). Given these theoretically different outcomes, studies empirically investigated asynchronous frame competition and examined individual-level moderators that might influence whether asynchronous frame competition cancels out the effects of single emphasis frames, leads to primacy effects based on the first frame exposure, or leads to stronger effects of the emphasis frame encountered later (recency effects).

Attitude certainty as a moderator in asynchronous frame competition

For instance, Matthes and Schemer (2012) argue that the certainty with which an attitude is formed based on prior one-sided frame exposure is a decisive factor in the stability of initial framing effects, despite later exposure to a one-sided counter-frame. In general, *attitude certainty* determines how persistent an attitude is, and the more certain a person is about his or her stance toward an attitude object, the less likely it is that later persuasive attempts can change this attitude (Krosnick et al., 1993; Petrocelli, Tormala, & Rucker, 2007). Thus, when exposure to a first emphasis frame leads to a certain issue attitude by forming an on-line attitude at t_1, it is unlikely that a counter-frame presented later in time at t_2 will affect the initially formed attitude, as the later frame must compete against a strong prior opinion (also see **Subchapter 2.4.1** for the role of strong prior attitudes that can inhibit emphasis framing effects). In other words, when attitude certainty is high after first

frame exposure, this exposure likely has a primacy effect compared to a counter-frame encountered later.

In contrast, when an initial one-sided emphasis frame affects citizens' issue attitude, but they form a memory-based attitude and are thus still uncertain as to whether this attitude is the right one, later exposure to a counter-frame should not only cancel out the initial framing effect, but also reverse the initial framing effect in the direction of the counter-frame. This way, it does not matter whether citizens were exposed to a specific frame before, as only the last frame exposure influences their attitude at t_2. This is because they did not possess an on-line attitude held with certainty to retrieve from memory and relied only on memory-based attitudes formed on the accessible considerations evoked by the counter-frame (Matthes & Schemer, 2012).

To test these assumptions, Matthes and Schemer (2012) conducted an experiment in which participants were first exposed to a one-sided emphasis frame (t_1). Ten days later, they received a one-sided counter-frame with the opposite valence (t_2). The stimuli dealt with health conditions in prisons and employed either a "personal responsibility" frame focusing on prisoners who do not care enough about their health themselves or a "societal" frame, which emphasized that society is responsible for financing better health conditions in prisons. As the dependent variable, respondents reported their issue attitude, which measured the extent to which they agreed that society is to blame for the bad health conditions in prisons. Participants had to answer this question directly after first exposure to either the personal responsibility or societal frame (t_1) and again directly after exposure to the opposite counter-frame ten days later (t_2).

In addition, the authors manipulated whether respondents formed their issue attitude during first frame exposure with high or low attitude certainty using the same procedure as in other studies to manipulate memory-based and on-line attitude formation (see **Subchapter 2.6.1**). To create uncertain attitudes at t_1, participants were told prior to first frame exposure to read the stimulus article focusing on the journalistic style of the stimulus. This was to distract them from forming an issue attitude with high certainty. The group expected to form a certain issue attitude was told to form a strong issue attitude and that they would be asked for this attitude later. A manipulation check confirmed that the latter group reported significantly more certain attitudes than the former group after first (one-sided) frame exposure (t_1). Exposure to a one-sided emphasis frame at t_1 led to significantly different issue attitudes. Respondents exposed to the societal frame supported significantly more strongly the idea that society is responsible for the bad health conditions in prisons than did participants who received the personal responsibility frame. This attitudinal effect at t_1 was independent of whether respondents formed their attitude with high or low attitude certainty.

However, the effects of exposure to a one-sided counter-frame ten days later (t_2) differed significantly between the different levels of attitude certainty. When respondents formed their issue attitude with low certainty at t_1, exposure to a counter-frame at t_2 reversed the initial framing effect and participants' attitude followed the last encountered emphasis

frame despite prior exposure to the opposite frame (i.e., a recency effect). For instance, respondents who first received the societal frame at t_1, and then the personal responsibility frame ten days later at t_2, switched their attitude in the direction of personal responsibility. This resulted in the same attitude shown by the group who only received the personal responsibility frame at t_1. That is, when respondents formed an attitude with weak certainty after first frame exposure, this prior frame exposure did not matter ten days later. Only the latest encountered counter-frame mattered for respondents' issue attitude.

However, the counter-framing effects at t_2 differed for participants who formed an issue attitude with high certainty at t_1. Note though that while exposure to a counter-frame ten days after initial exposure to the opposite frame significantly weakened the initial framing effect, the later frame did not reverse the initial framing effect. Issue attitudes at t_2 did not differ between participants exposed to the frames in a different order. This suggests that exposure to a counter-frame ten days later cancelled out the initial one-sided emphasis framing effects at t_2. When participants were exposed to both frames at the end, their attitudes did not differ regardless of the order in which they received the frames over time. Thus, higher attitude certainty after an initial emphasis framing effect did not prevent an effect of a counter-frame encountered later, as the authors initially expected. However, attitudes with higher attitude strength prevented at least the recency effect of the counter-frames received later, which the authors found for participants with less certain issue attitudes.

Type of initial attitude formation as a moderator in asynchronous frame competition

Chong and Druckman (2010, 2013) investigated asynchronous frame competition trough two interrelated experimental studies. However, the authors did not examine attitude strength as a potential moderator of the persistence of initial framing effects, but focused on something closely related, namely type of attitude formation during initial frame exposure. Prior to respondents' first exposure to a one-sided emphasis frame, Chong and Druckman (2010, 2013) manipulated whether participants formed a memory-based attitude held with less strength, an on-line attitude with high strength, or non-manipulated attitude (see **Subchapter 2.6.1** in which the results of the control groups of these studies were already described in terms of the general durability of emphasis framing effects based on single one-sided frame exposure). The authors assumed that counter-frames encountered later demonstrate weaker effects when the initial emphasis framing effect is an on-line attitude than when it is memory-based attitude, as on-line attitude tend to be more persistent over time.

The experiment dealt with a new surveillance law that allowed the US government to surveil citizens' communication behavior more extensively. The issue was framed either with a "terrorism" frame emphasizing that the new law prevents terrorist attacks and increases citizens' security, or a "civil rights" frame, which highlighted the problematic consequences of increased surveillance for citizens' right to privacy. At t_1, respondents

received one of these frames, and as the dependent variable, they reported their attitude toward the new law. This produced a clear initial emphasis framing effect. Participants who received the terrorism frame supported the new surveillance law significantly more strongly than did respondents exposed to the civil rights frame. Ten days later (t_2), they were exposed to either the opposite counter-frame (Chong & Druckman, 2010) or no frame (Chong & Druckman, 2013), and again reported their issue attitude. Next, 14 days after t_2, i.e., 24 days after first frame exposure (t_3), participants were exposed to either the same counter-frame as at t_2 again or to the counter-frame for the first time if they had not been exposed to it at t_2 (Chong & Druckman, 2013). Again, participants reported their issue attitude at t_3. Essentially, after initial one-sided frame exposure at t_1, which produced a clear initial emphasis framing effect, all respondents were exposed at least once to a counter-frame over time and some participants even twice (i.e., repetitive counter-framing).

Respondents whose attitude formation was not manipulated during initial one-sided frame exposure (t_1) demonstrated a significant decrease in the initial framing effect when exposed to the counter-frame 14 days later (t_2). After exposure to the counter-frame, their attitudes no longer differed according to the first frame or counter-frame to which they were exposed. As such, asynchronous frame competition cancelled out the effects of the single one-sided frame exposure at different points in time in a way comparable to situations with simultaneous frame competition. However, the initial framing effect reversed in the direction of the counter-frame when the delay between first and second frame exposure was 24 days (t_3). That is, even though participants first received an opposite frame, the later encountered emphasis frame at t_3 had a clear recency effect. This recency effect at t_3 had about the same magnitude when respondents had already been exposed to the same counter-frame at t_2. Thus, the repetition of the counter-frame (t_2 and t_3) did not reinforce the effect of the counter-frame at t_3, but stabilized the effect for participants with non-manipulated attitude formation, which is consistent with the results discussed for one-sided frame repetition in **Subchapter 2.6.2**.

Chong and Druckman (2010, 2013) observed even stronger recency effects of the later presented counter-frame for participants who formed a memory-based attitude during initial one-sided frame exposure (t_1). First, there was a recency effect of the counter-frame for such respondents when the counter-frame was presented 14 days (t_2) after initial frame exposure. Moreover, this recency effect significantly increased and participants followed the counter-frame even more strongly when the counter-frame was presented 24 days (t_3) after first frame exposure or when the counter-frame was repeated at t_2 and t_3. That is, memory-based initial emphasis framing effects seem highly vulnerable to the asynchronous presentation of counter-frames, which seem to easily reverse the initial effects into their attitudinal direction even when there is only a shorter delay of 14 days between exposure to the different one-sided frames and even more so if the delay is longer (24 days).

However, a different scenario emerged for participants who formed an on-line issue attitude during initial exposure to a one-sided emphasis frame. As expected by Chong and Druckman (2010, 2013), the initial framing effect demonstrated higher persistence for such

respondents. In fact, exposure to a counter-frame 14 days later (t_2) did not change the initial framing effect, but a clear primacy effect was evident. Even after exposure to the civil rights counter-frame, participants who received the terrorism frame 14 days earlier still supported the new surveillance law at t_2 at the same magnitude as at t_1. They also supported the law significantly more strongly at t_2 than respondents exposed to the civil rights frame first (t_1), who likewise demonstrated a persistent initial framing effect when exposed 14 days later (t_2) to their counter-frame (i.e., the terrorism frame). Moreover, not even repetitive exposure to a counter-frame changed the initial one-sided emphasis framing effect. Participants who formed an on-line attitude and received the civil rights frame at t_1 opposed the new surveillance law at the same magnitude 24 days later (t_3) after exposure to the terrorism frame once 14 days after initial frame exposure and a second time 10 days later.

However, even for respondents who formed an online-attitude at t_1, Chong and Druckman (2013) also found some recency effects of the counter-frames encountered later. When the time delay between initial frame exposure and participants' first exposure to a counter-frame was 24 days (t_3 without repetition), initial framing effects weakened substantially and respondents' issue attitude followed the counter-frame. That is, the counter-frame produced a recency effect, because the time span without any frame exposure was too long, meaning participants may have forgotten their on-line attitude and could not re-activate it from memory.

In sum, the results by Chong and Druckman (2010, 2013) imply the superiority of frames encountered later in asynchronous frame competition. Note though that these recency effects are limited by the degree to which citizens possess on-line attitudes through which initial framing effects rather persist (i.e., primacy effects) if the time delay between frame exposure is not too long. Moreover, the results did not reveal many situations in which the effects of single emphasis frames cancel out over time, as is often the case in situations of simultaneous frame competition (see **Subchapter 2.4.2**). That is, asynchronous competition often does not prevent emphasis framing effects. Rather, citizens arbitrarily change their issue attitude based on the emphasis frame *currently* more salient, even though they formed a different issue attitude when another frame was more salient before.

Need to evaluate as a moderator in asynchronous frame competition

The results for the moderating role of attitude certainty and type of attitude formation described earlier imply that the strength of prior attitudes can be decisive regarding whether initial framing effects persist when citizens are exposed later in time to a counter-frame. The role of prior attitude strength was also observed in another experiment by Chong and Druckman (2010), in which attitude strength was operationalized by measuring citizens' need to evaluate. As noted in **Subchapter 2.4.1**, the need to evaluate is a psychological trait variable that describes how frequently a person engages in the psychological evaluation of all types of objects. The higher individuals' need to evaluate, the more likely it is they already possess (strong) prior attitudes toward political issues. At a single point in time, a high need

to evaluate can prevent the occurrence of one-sided emphasis framing effects (cf. Druckman & Nelson, 2003). In particular, this is the case when the political issue framed has already gained some public attention and persons with a high need to evaluate already had the opportunity to form an initial attitude toward the issue before frame exposure.

However, Chong and Druckman (2010) assumed that need to evaluate could also be an individual-level moderator of single emphasis framing effects in asynchronous frame competition over time. If initial frame exposure at t_1 is the first time a person is exposed to the political topic, the effects of one-sided emphasis frames and of strong frames when simultaneously accompanied by a weak counter-frame likely occur independently from citizens' need to evaluate. However, the type (not the direction) of attitude that citizens form after initial frame exposure may differ according to need to evaluate. As persons with a high need to evaluate tend to form clearer judgments, the attitude formed after initial frame exposure at t_1 should have higher attitude strength. This may then make it less likely that subsequent exposure to a one-sided counter-frame at t_2 changes the initially formed attitude. Rather, the attitude formed at t_1 will likely persist after delayed counter-framing. Essentially, in asynchronous frame competition, a primacy effect of initial frame exposure should be evident when need to evaluate is high (Chong & Druckman, 2010).

In contrast, persons with a low need to evaluate are less likely to form strong attitudes based on initial frame exposure at t_1, as they generally engage less in forming clear judgments. Subsequently, exposure to a one-sided counter-frame later in time at t_2 should be influential and should reverse the initial emphasis framing effect into the direction of the counter-frame encountered later. That is, a recency effect should be evident in asynchronous frame competition when citizens have a low need to evaluate (Chong & Druckman, 2010).

To test these assumptions, Chong and Druckman (2010) partly relied on their experimental study on an urban growth project (cf. Chong & Druckman, 2007a) already described in **Subchapter 2.4.2**. However, the authors added a second frame exposure three weeks after (t_2) initial frame exposure (t_1). At t_1, respondents were exposed to either a one-sided frame or to competing frames simultaneously. Moreover, the strength of the emphasis frames also varied. As such, the experiment contained a strongly and a weakly compelling emphasis frame valenced against the urban growth project and a strongly and a weakly compelling frame in favor of the project. Some participants were exposed only to one of these frames, and others received to two or even three of these frames in simultaneous frame competition at t_1. As noted in **Subchapter 2.4.2**, directly after initial frame exposure, the results revealed that simultaneously competing strong frames cancelled out the effects of each single frame, but when strong frames were presented as one-sided or in simultaneous competition to a weak counter-frame, the strong frames exerted clear attitudinal effects. In contrast, weak frames were mostly ineffective. These results regarding initial frame exposure at t_1 were independent of respondents' need to evaluate.

Three weeks later at t_2, participants received either a strong or a weak one-sided counter-frame and again reported their issue attitude. To ensure that the frame presented

at t_2 was a counter-frame to the initial framing situation at t_1, Chong and Druckman (2010) exposed respondents to the frame that was either underrepresented at t_1 or that countered a balanced competing situation at t_1. For instance, when participants were exposed only to the strong pro frame at t_1, they received as a counter-frame at t_2 a strong con frame. When respondents received a strong con and weak pro frame at t_1, the counter-frame at t_2 was a strong pro frame. When the initial frame exposure at t_1 was a strong con frame, participants' counter-frame three weeks later at t_2 was a weak pro frame, and so on. To examine the recency effects of the counter-frame presented at t_2, the authors tested at t_2 any change in the initial attitude respondents formed after first frame exposure at t_1.

First, without considering citizens' need to evaluate, participants on aggregate demonstrated consistent recency effects of the counter-frame presented three weeks (t_2) after initial frame exposure (t_1) when the counter-frame was a strong frame, but only few and weaker recency effects when the counter-frame at t_2 was weak. For instance, respondents first exposed to the strong pro frame strongly favored the urban growth project (t_1). However, exposure to the strong con frame three weeks later (t_2) significantly reduced participants' support for the project. Likewise, respondents receiving simultaneously at t_1 a strong con and only a weak pro frame first opposed the project, but when exposed to the strong pro frame as a counter-frame at t_2, participants supported the project significantly more strongly. In contrast, when respondents received a strong con frame with a weak pro frame first (t_1), counter-framing with a weak pro frame was ineffective at t_2 and participants were opposed to the project at the same magnitude as after initial frame exposure at t_1. Thus, on aggregate, strong counter-frames presented in asynchronous frame competition changed initial issue attitudes, whereas the weak counter-frame did not (or less). This suggests that counter-framing three weeks later does not reverse per se initial emphasis framing effects but the persuasiveness of the presented counter-frame is decisive for recency effects through delayed counter-framing.

Next, Chong and Druckman (2010) investigated whether respondents' need to evaluate moderated the strength of the counter-framing effects. They found that the change in participants' issue attitude between initial frame exposure (t_1) and exposure to the one-sided counter-frame three weeks later (t_2) occurred at different strengths in the direction of the counter-frame depending on respondents' need to evaluate. The lower a person's need to evaluate, the more strongly the initial framing effect changed in the direction of the counter-frame encountered three weeks later. In contrast, a very strong need to evaluate prevented relevant attitudinal shifts based on the counter-frame, but led to persistent initial framing effects over time.

Moreover, this moderating mechanism of need to evaluate occurred for both strong and weak counter-frames. Respondents with a low need to evaluate demonstrated clear recency effects of the counter-frame presented later when the counter-frame was strong or weak, although with a somewhat smaller effect size when weak. This indicates that participants with a low need to evaluate who formed weaker issue attitudes during initial frame exposure were highly susceptible to the recency effects evoked by the presentation

of counter-frames in asynchronous frame competition. In contrast, a high need to evaluate fostered the stability of initial emphasis framing effects over time. Thus, this study adds further evidence that the strength of prior attitudes can be decisive for whether initial framing effects persist or reverse when citizens are later exposed to a one-sided counter-frame.

Political knowledge as a moderator in asynchronous frame competition

Besides prior attitude strength, citizens' political knowledge has also received attention as a potential moderator of the persistence of initial emphasis framing effects in asynchronous frame competition in an experimental study by Lecheler and de Vreese (2013). The authors hypothesized that the most recently encountered frame would influence citizens' issue attitudes the most, as the considerations made salient by the last frame received tend to be more easily accessible than the considerations highlighted by the opposing frame encountered earlier in time. Moreover, Lecheler and de Vreese (2013) assumed that the strength of such recency effects of the counter-frame presented later increases when the time delay is longer between exposure to the initial one-sided frame exposure and the one-sided counter-frame.

In addition to these assumptions, the authors expected that recency effects would be less pronounced when citizens possess high political knowledge. They reasoned that such citizens would have a greater ability to integrate the offered connection between the frame and the issue into their long-term memory when exposed to a one-sided frame first (t_1). When these citizens later receive a counter-frame (e.g., t_2), it is more likely that the frame connection learned during prior frame exposure is still available and can be activated. This re-activated opposing first frame can then serve to counter-argue the later counter-frame, through which the recency effects of the counter-frame should be less pronounced (Lecheler & de Vreese, 2013).

In contrast, citizens with low political knowledge would be less likely to store the connection between the first frame and the issue in their long-term memory after initial frame exposure (t_1). The reason is that it is generally more difficult for them to integrate new aspects into their memory because of fewer cognitive points of references to help them store these new aspects in their mental stockpile. Thus, when citizens with low political knowledge are later exposed to a one-sided counter-frame (t_2), they are less likely to easily remember the frame they received earlier at t_1 and thus, less likely to counter-argue the counter-frame received last. As a result, recency effects of counter-frames presented later in time should be more pronounced when citizens have low political knowledge (Lecheler & de Vreese, 2013).

Parts of the experimental design employed to test these assumptions were already described in **Subchapter 2.6.2** before when presenting the conditions that dealt exclusively with repetitive framing over time. However, this study also included conditions that explored the role of political knowledge in asynchronous frame competition. After the authors measured respondents' political knowledge, participants received at t_1 a one-sided

emphasis frame that offered a certain issue interpretation concerning the enlargement of the European Union. Some respondents received a positively valenced "opportunity" frame and others read a negative "risk" frame. They then reported their issue attitude immediately after the first one-sided frame exposure, revealing a significant emphasis framing effect at t_1. Either 15 minutes (t_2), 1 day (t_3), 1 week (t_4), or 2 weeks (t_5) after initial frame exposure, participants received once a one-sided counter-frame and again answered questions on their issue attitude. That is, respondents who read the opportunity frame at t_1, were later exposed to the risk counter-frame once at one of the mentioned later points in time, and participants who received first the risk frame were later exposed once to the opportunity counter-frame.

Without considering citizens' level of political knowledge, Lecheler and de Vreese (2013) found that the initial framing effect based on the first one-sided frame exposure (t_1) reversed in the direction of the counter-frame presented later. When the counter-frame was the opportunity frame, the recency effect of this frame occurred at all respective time points at which the study varied exposure to the counter-frame, be that 15 minutes (t_2), 1 day (t_3), 1 week (t_4), or 2 weeks (t_5) after initial frame exposure. However, when the counter-frame was the risk frame, a recency effect of this frame was only evident when presenting the counter-frame one week (t_4) or two weeks (t_5) later, i.e., when the delay between initial frame exposure and exposure to the counter-frame was longer. Still, this result suggests again that the last encountered emphasis frame tends to be the most effective frame in asynchronous frame competition, not the frame citizens are exposed to first.

Next, Lecheler and de Vreese (2013) tested whether the recency effects of counter-framing differed according to respondents' political knowledge. They found that participants with low political knowledge changed their attitude more strongly based on the counter-frame received later than did respondents with high political knowledge. However, this differential recency effect was limited to situations in which the counter-frame was presented shortly after initial frame exposure, namely 15 minutes later (t_2) or 1 day later (t_3). In the long run, citizens with high political knowledge were not less susceptible to the recency effects of the counter-frame received last. That is, political knowledge can lead to somewhat more persistent initial emphasis framing effects. However, overall, the results of this study also suggested relatively clear counter-framing effects in asynchronous frame competition. This implies that initial emphasis framing effects are not durable when contested by competing frames later in time.

Summary

This subchapter presented empirical results on the durability of the attitudinal effects of single emphasis frames in asynchronous frame competition over time, i.e., in situations in which citizens receive first a (one-sided) emphasis frame and later in time (e.g., two weeks later) a one-sided counter-frame with the opposite valence than the first frame. Although the studies found consistent emphasis framing effects on citizens' issue attitude after initial frame exposure, these effects often did not persist over time when citizens were later

exposed to a counter-frame. Moreover, the attitudinal effects of exposure to the counter-frame were often so strong they not only cancelled out the initial emphasis framing effects, as in simultaneous frame competition (see **Subchapter 2.4.2**), but the asynchronous counter-frame reversed the initial framing effects in the opposite direction, i.e., in the direction of the counter-frame. This suggests that in asynchronous frame competition, while the frames presented initially and those presented later are effective, ultimately, there are consistently stronger recency effects of later exposure to a counter-frame through which the last encountered frame usually surpasses the initial framing effect. The one-sided emphasis frame citizens receive last in asynchronous frame competition matters most in their attitude formation.

However, some moderating variables influence whether and how strongly recency effects occur. The effects of counter-frames presented later in time tend to be more pronounced when the initial attitude formed after initial frame exposure is less strong, memory-based, held with low certainty, when citizens have a low need to evaluate, or possess a lower level of political knowledge. In contrast, when initial issue attitudes are formed with high certainty, on-line, or citizens have a high need to evaluate, initial emphasis framing effects can persist and do not change over time through later exposure to a counter-frame. That is, at least citizens with strong prior attitudes resist counter-framing, although delayed counter-framing reverses initial emphasis framing effects on average.

Still, the question remains as to the implications of the empirical results regarding emphasis framing effects over time for assessing citizens' rationality in attitude formation under framing conditions. To address this, the following **Subchapter 2.6.4** first summarizes the most relevant results for the general durability of emphasis framing effects over time, the influence of frame repetition for the persistence of these effects, and the role of asynchronous frame competition for the durability of emphasis framing effects. Next, it discusses the implications of these results for rational attitude formation.

2.6.4 Summary and further implications for assessing citizens' rationality in attitude formation

The last subchapters focused on the durability of emphasis framing effects over time to assess better their long-term consequences. **Subchapter 2.6.1** provided empirical results on the general durability of emphasis framing effects based on single one-sided frame exposure, i.e., without any further exposure to the same or another emphasis frame for the same political issue. The majority of studies revealed that such effects decrease rather soon over time and weaken or even diminish as soon as ten days after frame exposure (see **Table 5**). However, when citizens form strong on-line issue attitudes during frame exposure, initial emphasis framing effects tend to be more persistent and do not diminish entirely. Still, single one-sided frame exposure does not seem very consequential in the long term. Even if different citizens receive different emphasis frames, they soon forget these and revert to their default issue attitude as if frame exposure had not occurred a few days or weeks before.

Table 5. Summary of empirical results for the durability of emphasis framing effects over time and the role of frame repetition

Investigated type of effect over time	Result(s) (with reference)
Durability over time based on single (one-sided) frame exposure	– Initial effect of one-sided frames after frame exposure at t_1 + no effect ten days after frame exposure (t_2) (Druckman & Nelson, 2003) – Initial effect of one-sided frames after frame exposure at t_1 + no or weaker effect three weeks after frame exposure (t_2) (Tewksbury et al., 2000) – Initial effect of one-sided frames after frame exposure at t_1 + no effect two weeks (t_2) or six weeks after frame exposure (t_3) (Lecheler, Keer et al., 2015) – Initial effect of one-sided frames after frame exposure at t_1 independent of type of attitude formation (memory-based, on-line, non-manipulated) + no effect ten days after frame exposure (t_2) when memory-based or non-manipulated type of attitude formation at t_1 + when on-line attitude formation at t_1, initial framing effects persist at t_2 (Chong & Druckman, 2010) – Initial effect of one-sided frames after frame exposure at t_1 + frame effect persists one day after frame exposure (t_2) + frame effect persists one week after frame exposure (t_3), but is weaker than at t_1 and t_2 + frame effect persists two weeks after frame exposure (t_4), but is weaker than at t_1 and t_2 + durability of frame effect over time somewhat stronger for moderate level of political knowledge than for low/high knowledge (Lecheler & de Vreese, 2011)
Repetitive exposure to the same frame over time	– Initial effect of one-sided frames after frame exposure at t_1 + when exposure to the same frame repeated three times (t_2: one day later, t_3: one week later, t_4: two weeks later) initial frame effect mainly persists at the same magnitude two weeks (t_4) and six weeks (t_5) after initial frame exposure + initial framing effect at t_5 only when moderate political knowledge, but not when low or high (Lecheler, Keer et al., 2015) – Initial effect of one-sided frames after frame exposure at t_1 + when exposure to the same frame repeated once (t_2: 15 minutes later, or t_3: 1 day later, or t_4: 1 week later, or t_5: 2 weeks later) initial frame effect persists at the same magnitude at all respective time points (t_2-t_5) + sometimes somewhat stronger repetitive frame effect when high political knowledge than when low political knowledge (Lecheler & de Vreese, 2013) – Initial framing effect at t_1 after two months (t_0-t_1) of predominant exposure to a certain frame when attitude formation at t_1 is memory-based, but not when on-line attitude formation + additional effects at t_2 of predominant exposure to the same frame in a further period of two months (t_1-t_2) when memory-based, but not when on-line attitude formation at t_1 + no or less effects of predominant frame exposure for shorter time spans (Matthes, 2007b, 2008)

However, the short-term nature of emphasis framing effects based on single one-sided frame exposure also indicates the lower rationality of these effects, although only temporarily. Citizens form an issue attitude in an arbitrary manner based on which frame is currently more salient. However, a few days later, this influenced attitude reverts to the initial state prior to any frame exposure. On one hand, this implies that preferences stabilize again rather soon after exposure to a one-sided emphasis frame. As rationality can be defined as the stability of attitudes that should not change based on the mere emphasis of a certain frame when available substantive information remains unchanged (Tversky & Kahneman, 1981, also see **Subchapter 2.2.2**), single frame exposure often does not threaten rationality in the long term.

On the other hand, the interim occurrence of the emphasis framing effect, which reverts after a few days, indicates that the stability of preferences is violated for some time. The mere increased salience of the frame alters citizens' issue attitude, and when the salience disappears after frame exposure, the effect also disappears soon, implying that the effect is labile and itself not substantiated. Thus, emphasis framing poses at least a temporary risk to rational attitude formation. Moreover, arbitrary attitudinal differences based on a single frame exposure can sometimes persist over time, in particular when citizens form on-line attitudes during initial frame exposure. In such cases, they arbitrarily rely on the salient frame, form a strong issue attitude based on this salience, and store the attitude in their mental stockpile through which the arbitrary attitude becomes more persistent over time.

Next, **Subchapter 2.6.2** revealed that repeated exposure to the same emphasis over time can increase the persistence and sometimes even the strength of initial emphasis framing effects (also see **Table 5** for a summary). That is, even though emphasis framing effects tend to be short term and thus less consequential in the long term, frame repetition can stabilize the effects of emphasis frames up to four weeks after last frame exposure. Hence, persisting attitudinal differences can arise between citizens repeatedly exposed to the same emphasis frame and citizens who frequently receive another frame, which might increase polarization in societies and distort democratic decision-making (see **Chapter 6.2** for a longer discussion on the potential societal consequences of emphasis framing). Given that already the initial emphasis framing effect implies arbitrary attitudinal differences based only on which frame a person was exposed to for a political issue, the persistence of this effect due to frame repetition indicates that this less rationally formed attitude can stabilize over time. That is, frame repetition seems to increase the stability of irrational and unsubstantiated issue attitudes in the long term.

However, the strongest indication for citizens' irrationality in attitude formation under framing conditions, discussed in **Subchapter 2.6.3**, is asynchronous frame competition. Whereas simultaneous frame competition often cancels out the attitudinal effects of single emphasis frames, and citizens show stable attitudes not affected by frames (see **Subchapter 2.4.2**), this changes considerably when citizens are first exposed to a one-sided emphasis frame and after some delay in time, to a counter-frame with the opposite valence.

In such situations, initial exposure to one-sided emphasis frames yield consistently clear attitudinal effects, but later exposure to a counter-frame often reverses these initial effects in the opposite direction, i.e., in the direction of the counter-frame (see **Table 6**). That is, each single emphasis frame is effective, but the last received frame is so influential it overrides initial effects and citizens base their issue attitude on the last frame, even though they were exposed earlier to a competing frame. These recency effects emerged in the majority of empirical studies, especially when the initially formed issue attitude based on first frame exposure was memory-based, held with less certainty, citizens had a low need to evaluate, or the counter-frame was a strong frame.

This implies even twice an irrational attitude formation under the realistic condition of asynchronous frame competition. First, citizens arbitrarily base their initial attitude on the frame they received first, indicating already at the onset of asynchronous frame competition an unsubstantiated attitudinal effect triggered by nothing but the more salient frame for the same issue. Second, the stability of preferences as the defining criterion of rationality is violated again when citizens receive a counter-frame a few days later. The initial, unsubstantiated attitudinal effect does not simply disappear when exposed to the counter-frame, as happens in simultaneous frame competition through which the final attitudes remain unaffected by framing and thus in a rational state (see **Subchapter 2.4.2**).

In contrast, the delayed, asynchronous counter-frame overrides the initial effect and the attitude switches in the direction of the counter-frame. This means that issue attitudes tend to vary arbitrarily between each single framing step in asynchronous frame competition and it is difficult to observe stable preferences over time for a certain attitude. Moreover, when citizens form their attitude after the delayed counter-framing, they seem to forget entirely the former frame with the opposite valence that was decisive in their earlier attitude formation. In fact, they do not really consider the former frame in their attitude formation, but mainly the latter frame, despite that they would not be affected by any frame had they been exposed to them simultaneously. That is, arbitrary attitudinal differences also emerge when comparing simultaneous and asynchronous frame exposure to competing frames, although citizens ultimately received exactly the same frames. Thus, exposure to emphasis frames in asynchronous frame competition over time can lead to irrational attitude formation based on the salience of the emphasis frame encountered last.

However, when citizens have a high need to evaluate and form strong on-line issue attitudes with high certainty during initial frame exposure, they are less susceptible to subsequent strong attitudinal changes based on exposure to a counter-frame later in time (see **Table 6**). Nevertheless, this does not necessarily mean that such citizens form rational issue attitudes. In the case of the primacy effects of first frame exposure that persist at about the same magnitude after delayed counter-framing, the initially formed issue attitude still relies arbitrarily and irrationally on the emphasis frame presented first. However, the attitude then resists further arbitrary change in the direction of the counter-frame. That is, the subsequent persistence of the initial irrational attitude does not imply that the final attitude is rational; it is still biased by initial frame exposure.

Table 6. Summary of empirical results for the durability of emphasis framing effects over time in asynchronous frame competition and the role of individual-level moderators

Investigated moderator (over time)	Result(s) (with reference)
Attitude certainty in asynchronous frame competition	– Initial effect of one-sided frames after frame exposure at t_1 independent of attitude certainty + when ten days later (t_2) exposed once to a one-sided counter-frame, initial framing effect disappears at t_2 when high attitude certainty at t_1 (cancelling out effect), but initial framing effect reverses in the direction of the received counter-frame at t_2 when low attitude certainty at t_1 (recency effect) (Matthes & Schemer, 2012)
Type of attitude formation in asynchronous frame competition	– Initial effect of one-sided frames after frame exposure at t_1 independent of type of attitude formation (memory-based, on-line, non-manipulated) + ten days later (t_2) exposed once to a one-sided counter-frame (cf. Chong & Druckman, 2010) and/or 24 days later (t_3) exposed (again) to the (same) counter-frame (cf. Chong & Druckman, 2013) + when non-manipulated type of attitude formation at t_1, initial framing effect disappears when receiving a counter-frame at t_2 (cancelling-out effect) and reverses when exposed again to the counter-frame at t_3 (recency effect) or when solely exposed to the counter-frame at t_3 but not at t_2 (recency effect) + when memory-based attitude at t_1, initial frame effect reverses in the direction of the received counter-frame at t_2 (recency effect) and even more so when exposed again to the counter-frame at t_3 (increased recency effect) or when solely exposed to the counter-frame at t_3 but not at t_2 (increased recency effect) + when on-line attitude at t_1, initial framing effect persists despite exposure to counter-frame at t_2 (primacy effect) and despite repeated exposure to this counter-frame at t_3 (primacy effect), but when solely exposed to the counter-frame at t_3 and not at t_2, initial framing effect reverses (recency effect) (Chong & Druckman, 2010, 2013)
Need to evaluate in asynchronous frame competition	– When simultaneous competition between differently valenced frames at t_1, competing strong frames cancel out each other but strong frames effective when competing frame is weak, whereas weak frames ineffective + three weeks later exposed once to a strong or weak counter-frame (t_2) + when strong frame at t_2, initial framing effect reverses (recency effect) + when weak frame at t_2, initial framing effect mainly persists (primacy effect) + high need to evaluate fosters primacy effects, but low need to evaluate fosters recency effects regardless of frame strength at t_2 (Chong & Druckman, 2010)
Political knowledge in asynchronous frame competition	– Initial effect of one-sided frames after frame exposure at t_1 + when later exposed once to a one-sided counter-frame (t_2: 15 minutes later or t_3: 1 day later or t_4: 1 week later or t_5: 2 weeks later), initial frame effect reverses in the direction of the counter-frame at all points in time for counter-frame A (t_2-t_5), but solely at later points in time for counter-frame B (t_4 & t_5) + recency effects sometimes (t_2 & t_3) stronger when political knowledge low than when high (Lecheler & de Vreese, 2013)

In some empirical studies, however, exposure to a counter-frame was slightly effective and canceled out the initial framing effect. If this outcome occurs – which seems rare – asynchronous frame competition can lead to rational attitude formation after counter-framing in which no frame is effective in the end and thus, no arbitrary attitudinal differences are evident based on the temporal sequence of the frames over time. Then, the final issue attitudes are comparable to situations of simultaneous frame competition in which the emphasis on various frames prevents irrational frame effects. Furthermore, when the counter-frame is a weak and less compelling frame, it is ineffective and does not further threaten citizens' rationality in attitude formation. However, most studies demonstrated the clear recency effects of the counter-frame received last, implying in general a rather strong tendency for irrational attitude formation in situations of asynchronous frame competition over time.

Again, however, this is thus far a preliminary conclusion on an irrational attitude formation due to emphasis framing. **Chapter 2.8** discusses important recent critiques on the empirical paradigm of researching emphasis framing effects, which (also) questions whether the constructed emphasis frames described in the literature can imply irrational attitudinal changes at all. Before presenting this criticism and the solution this book proposes to tackle it, **Chapter 2.7** offers a summarizing interim conclusion on what most of the (criticized) literature suggests regarding the effects of emphasis frames on citizens' attitude formation.

2.7 Interim conclusion: The (ir-)relevance of emphasis frames in attitude formation

The last chapters provided an extensive overview of prior scientific literature on emphasis framing effects. **Chapter 2.1** defined these as the effects of salient, content-related, and valenced issue perspectives in political messages on the formation of citizens' issue attitudes. **Chapter 2.2** then provided a large volume of empirical evidence on simple emphasis framing effects. When citizens receive a one-sided emphasis frame highlighting a certain perspective of a political issue or event, they form – on average – significantly different issue attitudes than when exposed to another differently valenced frame emphasizing another perspective or when exposed to no frame. As such, citizens' attitude formation relies on the emphasis frame salient in a message, but if a different frame is more salient, they form a different issue attitude. This result, which has been often replicated, implies that emphasis framing can be a powerful tool for political actors to influence the electorate, but seems to question citizens' rationality in attitude formation, which should resist unstable attitudinal preferences based on the mere emphasis of a certain issue aspect. Although the same political issue is framed, citizens arbitrarily rely on the more salient aspect of the issue and show unstable attitudinal preferences that seem to change only

because of what is emphasized in a political message as most important, not because of the substance of an issue.

Next, **Chapter 2.3** "zoomed" into these effects to explore the explaining psychological mechanisms that mediate emphasis framing effects. However, the empirical studies on cognitive mediators reviewed produced no evidence that such effects are the mere result of simply increasing the temporary accessibility of a certain frame in a person's working memory, which citizens then unconsciously employ in their attitude formation. In contrast, empirical studies suggest that emphasis frames rather work consciously and strengthen how appropriate (i.e., applicable) citizens judge the highlighted issue perspective in interpreting the issue. However, it remains empirically unclear whether emphasis framing rather fosters the applicability of the frame itself (belief importance) or also adds or changes certain content-related beliefs about the issue (belief content). At a first glance, the conscious increase in applicability judgments might be interpreted as rational shifts in citizens' attitude formation by learning what is important about an issue. However, this might be rather a form of seeming rationality, as also these conscious applicability judgments often shift arbitrarily depending on frame exposure.

Chapter 2.4 then revealed that emphasis framing effects tend to be more complex than suggested in the studies on simple emphasis framing. In fact, such effects do not always work uniformly for all citizens. The effects can also be moderated by additional variables at the individual level. In particular, emphasis framing effects tend to be stronger when aligned with citizen's prior political attitudes, while strong prior attitudes that contrast the emphasized frame rather prevent the occurrence of such effects. However, matching individual characteristics are not always necessary conditions for an emphasis frame to influence a person's issue attitude. Possibly, emphasis frames also affect citizens who are less susceptible, although to a lower extent. Still, the relevance of individual-level moderators suggests that not everyone is affected by any frame, but that citizens often only follow the frames they individually judge as appropriate. This suggests that emphasis framing effects are less arbitrary and thus less irrational attitudinal shifts than suggested when only examining the main effects of frames.

Moreover, **Chapter 2.4** showed that the occurrence of other message characteristics such as source credibility or party cues often reduce the strength of emphasis framing effects. Most important is that when political messages emphasize simultaneously competing frames for the same issue, framing effects are limited and the effects of the single frames often cancel each other out. That is, in more realistic scenarios of frame competition, citizens' rationality in attitude formation is not much threatened, as the presence of various frame emphases mostly prevents that citizens arbitrarily base their attitude on a single emphasis frame.

However, **Chapter 2.5** introduced value emphasis frames as a specific type of emphasis frame that construct the meaning of issues based on fundamental and widely cherished political values. Empirical studies revealed that such frames exert relatively strong attitudinal effects when presented in a one-sided way. Even though value emphasis framing

effects are more pronounced when they match citizens' political value preferences, i.e., when they are value-resonant, they can also influence citizens with non-matching values, because such frames draw on issue aspects that are difficult to neglect even if they are not at the top of individuals' value hierarchies. That is, value emphasis frames have the capacity to influence citizens to form issue attitudes aligned with non-preferred political values, violating their otherwise highly stable political value preferences. Thus, value emphasis framing can lead to irrational attitudes that shift arbitrarily based on the emphasized frame and are not aligned with citizens' deeply held political stances, at least when value emphasis frames are presented as one-sided frames.

The strongest evidence for citizens' susceptibility to irrational attitude formation under framing conditions was provided by empirical studies that investigated emphasis framing effects over time (see **Chapter 2.6**). The short-term nature of emphasis framing effects that decrease soon after single one-sided frame exposure, for example, suggests that citizens' issue attitudes are temporarily unstable and revert to a default position. This underlines how unsubstantiated the arbitrary interim attitudinal shifts induced by emphasis framing are. While citizens regain a state of stable attitudes soon after frame exposure, and thus return to rational attitudes later unaffected by framing, the repetition of the same frame over time often increases the persistence of initial emphasis framing effects, making these arbitrary attitudes consequential in the long term.

Moreover, in the realistic setting of asynchronous frame competition over time, in which citizens first receive a one-sided frame and later in time a counter-frame with the opposite valence, issue attitudes oscillate between the different frame directions when strong attitudes are not formed during initial frame exposure. That is, even though citizens have been exposed to a competing frame before and thus should know the relevance of a different issue perspective, the one-sided counter-framing presented later often shifts initially formed issue attitudes to the opposite direction. In asynchronous frame competition, each single emphasis frame is effective and reverses prior framing effects. Thus, citizens' final issue attitude depends in many cases on the temporal sequence of frame exposure, which does not confirm rational attitude formation under framing conditions over time.

Therefore, the empirical literature on emphasis framing effects in general seems to suggest three main results regarding when and how strongly frames influence citizens' issue attitudes in an irrational manner. First, the presentation of one-sided emphasis frames produces often arbitrary and irrational attitudinal differences, especially when employing political values in the frames. However, not everyone is equally susceptible to any frame, and individual characteristics can moderate and dampen emphasis framing effects in a rational manner. Second, the simultaneous presentation of frames mostly prevents the occurrence of single emphasis framing effects. In such situations, citizens form rational attitudes that are not affected by the mere emphasis on certain aspects of an issue. Third, however, when exposure to competing frames takes place sequentially with some delay in time between single (one-sided) frame exposures, frame competition does often not

prevent emphasis framing effects. In fact, citizens often form their attitude based on the last frame encountered, reversing initial attitudinal effects. Thus, when emphasis frames are presented one-sided – regardless of whether it is the first time a person receives a frame for the issue or was already exposed to a competing frame earlier in time – such frames tend to threaten rational attitude formation.

2.8 A response to recent criticism on emphasis framing effects

2.8.1 The confounding of thematic information and emphasis frames in empirical research and its implications

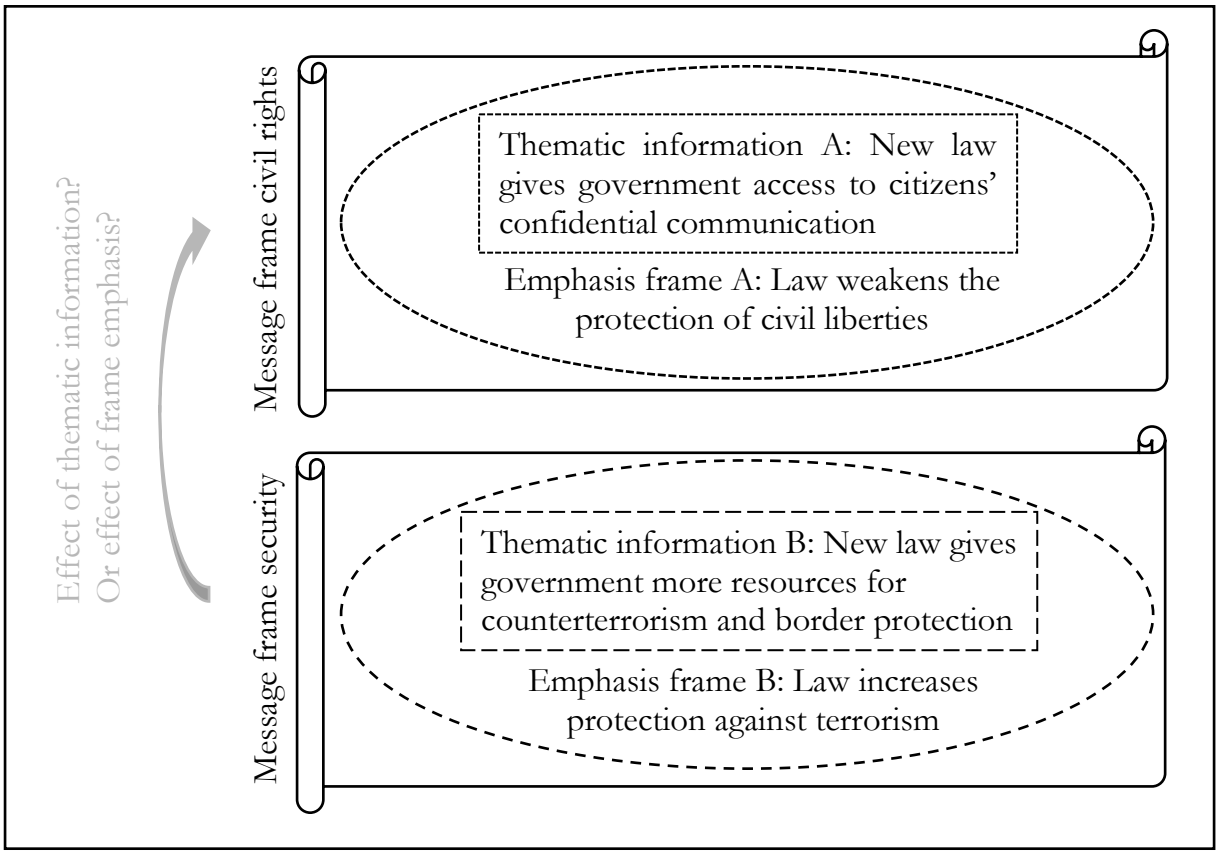
The last chapters showed that empirical studies on emphasis framing effects in political communication produced much evidence of citizens' susceptibility to (one-sided) emphasis frames. However, the current empirical paradigm of researching emphasis framing effects has received important criticism questioning the existence of emphasis framing effects, even in one-sided situations. The main argument of these is that emphasis frames are wrongly designed in (experimental) studies and confound the manipulation of frames with the additional manipulation of substantive issue-specific information and persuasive arguments (Leeper & Slothuus, 2017; D. A. Scheufele & Iyengar, 2017). In other words, frame manipulations not only vary *how* a topic is presented, but also *what* is presented regarding the topic (Cacciatore et al., 2016). What does this mean and what are the consequences of such confounding when assessing emphasis framing effects?

Determining what is confounding

Beginning with the first question, Leeper and Slothuus (2017) provide an instructive example of the confounded manipulation of the framing of a new law (the so-called "Patriot Act") in the study by Druckman and Leeper (2012). One experimental group received the "civil rights" emphasis frame, which highlighted that the new law is problematic from a civil rights perspective. The other group was exposed to a "security" frame emphasizing the importance of the law in preventing terrorist attacks. However, the stimulus material not only varied the frame emphasis but also substantive thematic information together with the framing condition (see **Figure 2**). When the law was framed from a civil rights perspective, participants read the additional information that "the government has access to citizens' confidential information from telephone and e-mail communications" (Druckman & Leeper, 2012, p. 892). In contrast, the condition with the security frame did not mention this policy-relevant information, but changed it to "the government has more resources for counterterrorism, surveillance, border protection, and other security policies" (Druckman & Leeper, 2012, p. 892).

Thus, the conditions not only varied regarding the framing of thematic information (i.e., the suggestion of with which standard of evaluation the issue should be interpreted) but also the thematic information itself. Therefore, respondents in the different groups did simply not form an attitude toward the same policy measure, but rated their opinion on very different topics in addition to different emphasis frames – a law giving the government the means to surveil *terrorists* and a law for surveilling *citizens'* confidential communication. Thus, it is unclear whether differences according to the framing condition actually derived from the different frames or not simply from the different thematic information.

Figure 2. Schematic illustration of emphasis frames confounded with varying thematic information



Unfortunately, this is not a unique example of confounded emphasis framing effects in the literature. Leeper and Slothuus (2017) reviewed more than 100 experimental studies on emphasis framing effects, concluding that "most, if not all, framing studies" (p. 3) show this confounding between frames and substantive information. D. A. Scheufele and Iyengar (2017) agree, offering an abstract criticism of the current emphasis framing research using the metaphor that confounded studies not only change the frame of a painting, but also the painting itself by mixing emphasis frames with varying thematic information. Although many studies seem to follow the relevant distinction between constant thematic core elements and varying frame-carrying elements (Price et al., 1997) when constructing frames

for experimental research (de Vreese & Lecheler, 2012, also see **Subchapter 2.2.1**), the frame-carrying elements often not only carry the frame itself but also different substantive issue-specific information. However, this substantive information should be part of the constant thematic core elements to not confound frames and the substantive content of an issue or event (Leeper & Slothuus, 2017).

The consequences of this confounding are twofold: First, it can be interpreted as a mismatch between the theory that differentiates information-based persuasion effects by offering new information and framing-based persuasion as the emphasis on how this information should be weighted (cf. Nelson, Oxley et al., 1997), and the empirical paradigm confounding both aspects. Second, if the reason for effects between different framing conditions is only the varying issue-specific information and not the emphasis frame, citizens' susceptibility to framing effects could be overstated in the literature, because it might imply that a simple shift in the frame does not change attitudes; rather, the persuasiveness of new and substantive thematic information does (Leeper & Slothuus, 2017).

Mismatch between theory of framing and empirical paradigm

First, to elaborate the criticism on the theoretical level, the confounding of frames and thematic information in the empirical paradigm have "morphed" emphasis frames into messages (D. A. Scheufele & Iyengar, 2017, p. 622), rendering emphasis frames indistinguishable from other means of persuasion such as providing new information or a mix between frames and new information. If thematic information is also a frame, everything becomes a frame and every message can be investigated under the label "frame." This threatens the theoretical distinctiveness of the framing approach from other models of media effects and transforms the term framing into a "catch-all phrase" (Cacciatore et al., 2016, p. 20) that inhibits a meaningful investigation of the underlying psychological mechanisms of different message features.

This is most evident when revisiting the fundamental differentiation between information-based persuasion and framing proposed by Nelson, Oxley et al. (1997) and based on Fishbein and Ajzen's (1975) expectancy-value model of attitudes (see **Subchapter 2.3.2**). Formally, one can describe an attitude (A) as the sum of beliefs about an attitude object (v_i) weighted by the importance (w_i) attributed to that belief to form the attitude: $A = \sum v_i w_i$. While information-based persuasion aims to directly change underlying beliefs regarding an attitude object or add new beliefs to the equation by providing new thematic information on an issue or event (e.g., a new infrastructure project will provide 1,000 new jobs), framing – by definition – does not provide new thematic information. Rather, emphasis framing tries to change the importance attributed to beliefs by referring to evaluative standards (e.g., the creation of jobs is an important goal) that already exist in citizens' knowledge structures (Nelson, Oxley et al., 1997). Based on this differentiation, the confounding of emphasis frames with new thematic information in experimental stimuli inhibits a clear and separate test of the framing hypothesis (Leeper & Slothuus, 2017; D. A.

Scheufele & Iyengar, 2017). As most emphasis framing studies contain this confounding, the theory of framing effects has rarely been tested in accordance with its postulates (Leeper & Slothuus, 2017).

Implications for assessing the effectiveness of frames and citizens' rationality

Besides this mismatch between framing theory and the empirical paradigm observed by critics of the emphasis framing approach (e.g., Cacciatore et al., 2016; Leeper & Slothuus, 2017; D. A. Scheufele & Iyengar, 2017), the second consequence of confounding is that the effectiveness of frames themselves in influencing citizens' attitudes could be exaggerated in the literature (Leeper & Slothuus, 2017). Framing is often understood as a powerful political tool with minimal costs (Jacoby, 2000), because it does not necessarily need to change underlying beliefs, but works via changing the importance of beliefs (Nelson & Oxley, 1999). According to the theory, emphasis framing enables altering attitudes without providing additional (persuasive) factual information on an issue and without changing the informational basis of an attitude (Leeper & Slothuus, 2017). Thus, framing is often categorized as a subtle form of media influence (D. A. Scheufele, 2000) with potentially strong effects (Jacoby, 2000), because it seems "easier to change the frame of reference than the beliefs underlying one's attitude" (Chong, 2000, p. 118).

For example, if a government can gain support for prohibiting a rally of an oppositional political camp by simply emphasizing a security frame describing this rally as a threat to public order, the government would not need to also change beliefs about the rally and the (maybe critical) political demands behind it. In other words, because of emphasis framing, a complex discussion about thematic information and facts, which is maybe difficult for a political actor to dominate, is not needed to influence citizens' attitudes in an intended direction. Therefore, framing seems an appealing political strategy often employed by political actors (Z. Pan & Kosicki, 2001).

If, however, emphasis frames and the provision of new thematic information are confounded, as in most effect-oriented studies, it is not clear whether framing is actually responsible for effects on citizens' issue attitudes or only the provision of new and persuasive factual arguments in the additional varying thematic information affect attitudes (Leeper & Slothuus, 2017). Therefore, the effectiveness of frames could be exaggerated and their effects may originate only from the varying new thematic information or from the combination of the frame emphasis with compelling (one-sided) thematic information. If these two alternative explanations are correct, it would be more difficult to expect emphasis framing effects outside the laboratory, because it would not be sufficient to emphasize only an aspect of an issue to alter belief importance. Instead, political actors would have to change thematic beliefs, which requires providing additional and compelling new thematic information.

While the emphasis on a culturally well-known frame is rather easy to communicate (e.g., a political value frame, see **Subchapter 2.5.2**), the provision of new persuasive thematic information requires more effort (e.g., producing credible evidence through

scientific studies, finding experts who can provide compelling arguments regarding the issue). Moreover, in some situations, the opposite camp may have the better arguments and facts. If emphasis framing alone is effective, political actors need not fear situations with less compelling factual thematic information on their issue position as long as the actors employ an applicable frame (e.g., value emphasis frames) that attributes higher importance to a specific thematic consideration. In contrast, if the effectiveness of frames depends on substantive thematic information, emphasis framing alone will not help a political actor shape public opinion without additional control over this information, which is – fortunately – difficult to obtain in the current age of social media.

The (thus far) obscure role of substantive thematic information in the effectiveness of emphasis frames is also important in assessing citizens' rationality in attitude formation (Leeper & Slothuus, 2017). If "(often small) changes in the presentation of an issue or an event produce (sometimes large) changes of opinion" (Chong & Druckman, 2007b, p. 104), "framing effects suggest that distributions of public preferences are arbitrary, and that political elites can manipulate popular preferences to serve their own interests" (Chong & Druckman, 2007b, p. 120). In other words, emphasis framing effects suggest at a first glance that citizens do not form attitudes rationally, but change their attitudes toward an issue based on simple shifts in frames (also see **Subchapter 2.2.2**, **Subchapter 2.5.4**, and **Subchapter 2.6.4**).

Of course, changes in attitudes are not per se a sign of irrational attitude formation, but can also imply that citizens are willing to learn and adjust their attitudes when receiving messages (Chong & Druckman, 2007b). However, rationality depends on the aspect of the message citizens use to form or alter their attitudes, namely new substantive thematic information or emphasis frames. A defining criterion of rationality is the consistency and coherence of preferences (Tversky & Kahneman, 1981). More specifically, rationality implies that a person arrives consistently at the same result (e.g., a preference, a decision, or an attitude) when faced with the same substantive information. Rationality further means that this consistency should not be affected by changes in the frame (Tversky & Kahneman, 1981), namely by how the same substantive information is presented.

In contrast, irrationality means that people arbitrarily demonstrate different results when the informational situation is consistent. For instance, it is irrational to prefer policy A to policy B in the morning but policy B over policy A in the evening when the policy options remain the same. Moreover, it is irrational when citizens rely on aspects of the presentation of the same information for their attitude formation, such as frames or order, and thus do not base their preference on substantive information. For example, a person displays unsubstantiated, irrational preferences when preferring policy A over policy B when policy A is presented first, but prefers policy B over policy A when policy B is presented first. If, however, thematic information varies, changing preferences are not irrational, because this change follows a new informational situation. For instance, one can first prefer hypothesis A to hypothesis B based on theoretical considerations, but it can be

rational to later prefer hypothesis B to A when new information is presented such as new empirical evidence for hypothesis B.

In short, changes in attitudes are not irrational if thematic information about the attitude object varies in a message, but changes in attitudes are less rational if issue-specific information is constant and only the emphasis frame varies. The confounding of frames and thematic information in most experimental studies on emphasis framing effects implies that different preferences based on the framing condition can be interpreted as rational attitude changes, because they are actually based on different thematic information (for such an interpretation, see e.g., Chong & Druckman, 2007b). However, confounded studies cannot test the opposite – irrationality in attitude formation – because thematic information varies alongside the frame. Thus, these studies are not a valid foundation from which to assess the influence of framing on rational attitude formation. Therefore, it is important to differentiate between thematic information and emphasis frames and test the effects of emphasis frames when thematic information remains constant.

First attempts in the literature to disentangle issue-specific information and emphasis frames

Based on these fundamental insights, Leeper and Slothuus (2017) proposed that future studies should more carefully construct emphasis frames. Furthermore, they conducted an empirical research program comprising ten original experimental studies that clearly separated the effects of substantive new thematic information and emphasis frames using in total more than 5,000 participants and different political issues in the experiments (e.g., medical health records, hate group rallies).

The manipulation of most of the ten experiments was as follows. According to their random assignment to the first factor "information," participants received different issue-specific information regarding the same policy to assess the influence of substantive thematic information on issue attitude toward this policy. For example, one condition told respondents that a new medical policy has high impact with low costs, and another condition stated that the new medical policy has low impact with high costs. Afterward, respondents received either a cost frame or an impact frame (second factor "frame") that emphasized a specific dimension of the thematic information participants had received before. This frame emphasis did not add any further information about the topic to examine whether emphasis framing has an effect on issue attitude besides the beliefs generated by the manipulation of the new thematic information in the first place. The frame manipulation simply stated:

> One "should judge the proposal based on whether it is [is costly | will affect the health of average Americans]. Indeed, much of the debate over the proposal now revolves around [the question of costs | the proposal's impact on patients' health]." (Leeper & Slothuus, 2017, p. 27)

Here, for each level of the factor information, the design enabled testing the effect of the cost frame compared to the impact frame (and sometimes compared to an additional control group) when information was constant, while simultaneously allowing an analysis of whether emphasis framing is more or less effective in specific informational situations (i.e., levels of the factor "information").

In all ten experiments, Leeper and Slothuus (2017) found consistently strong support for the influence of new thematic information on issue attitude. For example, when provided the information that the new policy has high impact with low costs, participants supported the policy significantly more strongly than when they received the information that the new policy has low impact and high costs. In contrast, additional framing of the issue-specific information by emphasizing either the costs or the impact did not indicate significant effects in most informational situations in the ten experiments. In the rare case that emphasis frames significantly affected issue attitude, the effects were substantially smaller than the effects of the thematic information. Thus, the authors concluded, "emphasis alone is commonly an insufficient political strategy. Citizens are not so easily swayed" (Leeper & Slothuus, 2017, p. 55).

However, the study had some methodological shortcomings that preferred the occurrence of the effect of thematic information to that of the frame effect, making it difficult to consider the authors' conclusion. In the first eight experiments, the manipulation of issue-specific information was by far longer than of the emphasis frame, making it unclear whether the strong effects of information were not simply the result of longer exposure. Even though the last two experiments shortened the length of the manipulation of thematic information to improve the design, the manipulation of emphasis framing was still only about half as long as the manipulation of issue-specific information. As such, while their studies overcame the confounding of thematic information and emphasis frames, the authors likely introduced a new confounding through the length of the manipulation in their experiments, raising doubts about the ineffectiveness of emphasis frames when these frames do not provide new issue-specific information.

More problematic, however, is the very narrow manipulation of emphasis frames in all experiments. In fact, the manipulation of emphasis frames was reduced to a short sentence that asked participants to think of the costs (or impact) when forming their attitude. In terms of external validity, such manipulation does not seem a very realistic form of emphasis frames in political communication processes in the real world. When a political actor frames an issue, he or she typically not only states "think of the costs" but also explains *why* the costs are a problem, i.e., why the cost frame is applicable for that issue (Nelson, 2004).

Besides the problem of external validity, whether the narrow manipulation actually captures the theoretical idea of emphasis frames can also be questioned. Emphasis frames make "sense of relevant issues" (Gamson & Modigliani, 1989, p. 3); "suggest how events should be understood" (Berinsky & Kinder, 2006, p. 641); and "diagnose, evaluate, and prescribe" (Entman, 1993, p. 52) the social world. In other words, frames offer meaningful

issue interpretations and explain how to think of an issue. While a single sentence might be sufficient to create a frame through powerful symbols (Entman, 1993; Z. Pan & Kosicki, 1993), it is unclear whether the chosen narrow manipulation created a meaningful emphasis frame, because the explanation for why one should base one's attitude on this frame is simply missing in the manipulation. The problem remains even though Leeper and Slothuus (2017) provide manipulation checks for the framing manipulation, because their manipulation checks only measured whether participants recognized the manipulated single sentence, not if participants interpreted the sentence as a frame. Given this methodological shortcoming, it remains unclear whether emphasis frames are actually ineffective in influencing citizens' opinions and only thematic information shapes their issue attitudes.

Moreover, the only further study that separated at least to some degree the effects of emphasis frames and factual thematic information arrived at the opposite conclusion, namely that additional facts about the issue added little to the effectiveness of frames not containing any factual content (Druckman & Bolsen, 2011). However, this study also has shortcomings, making it difficult to simply assume that emphasis frames without thematic information actually influence issue attitudes. Specifically, the construction of frames without additional facts is confounded with an explicit consensus endorsement stating that "most agree" that the respective frame is the most important implication of the issue. This makes it unclear whether frames were responsible for attitudinal effects or the effects simply originated from following the majority when forming the attitude (i.e., a bandwagon effect, see Nadeau, Cloutier, & Guay, 1993).

Nevertheless, the study by Leeper and Slothuus (2017) is an important starting point in overcoming the confounding of substantive thematic information and emphasis frames. The previous pages showed how important this separation is in assessing the "true" effect of emphasis frames, namely a frame effect that results only from the frame and not from varying thematic information. Thus, the study reported in this book responds to recent criticism on emphasis framing effects and separates the effects of new thematic information and emphasis frames. To do so, a deeper theoretical discussion on externally valid emphasis frames that offer meaningful issue interpretations without providing new thematic information is elaborated next (see **Subchapter 2.8.2**).

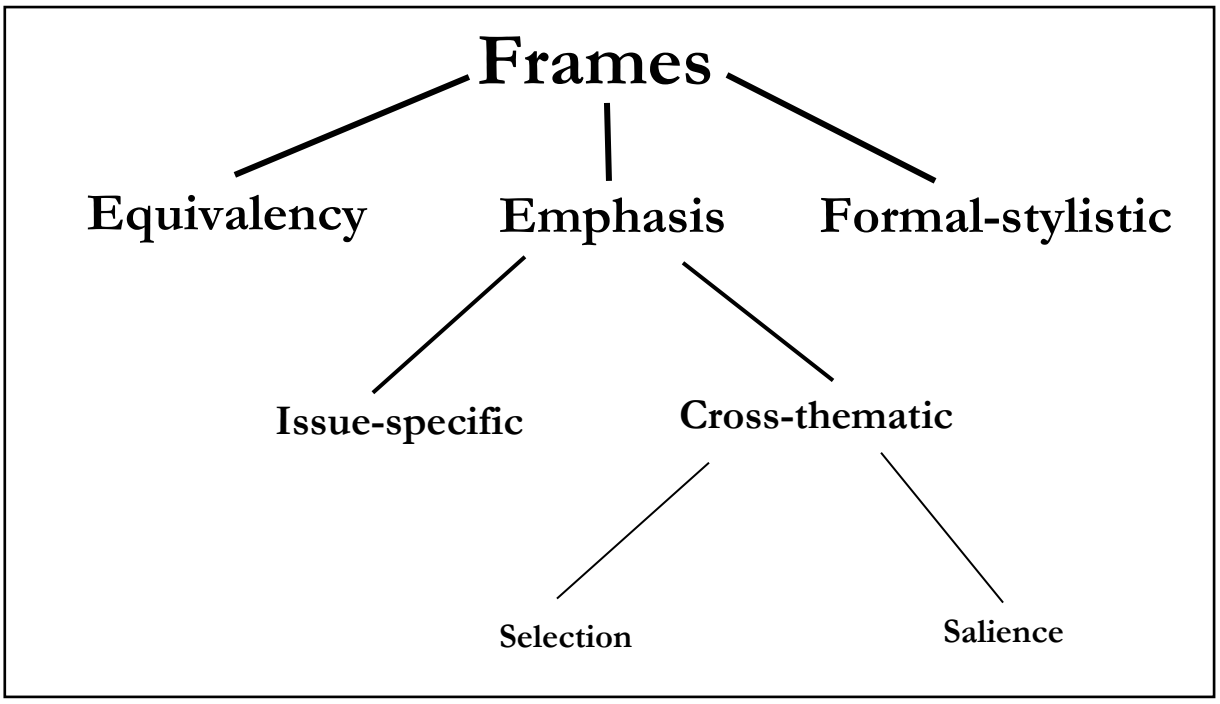
2.8.2 Introducing a new differentiation of emphasis frames: Salience emphasis frames vs. selection emphasis frames

Before conceptualizing emphasis frames that are not confounded with the additional offering of new thematic information, it is important to state that this conception does not claim to be the only valid way to construct emphasis frames or how they appear in real political communication processes. The classic definition of emphasis framing by Entman (1993) is as follows: "To frame is to *select* [emphasis added] some aspects of a perceived reality and make them more *salient* [emphasis added] in a communicating text" (p. 52). Thus, it could be argued that some important frame definitions allow for the construction of

frames using both the selection of thematic information (e.g., a new infrastructure project will lead to 1,000 new jobs) and the salience of the emphasis frame (e.g., it is important to evaluate the new infrastructure project in light of the creation of new jobs).

Therefore, a political actor can also construct an emphasis frame by selecting new factual arguments (i.e., selection emphasis framing), and not only by suggesting an interpretation of a given situation in a certain frame without adding new facts to the topic (i.e., salience emphasis framing). Thus, framing effect studies in political communication that confounded emphasis frames and new thematic information are not meaningless. They show an important aspect of emphasis framing effects: frame effects involving the addition of new facts, which is certainly a political tool often employed to influence attitudes (Hänggli & Kriesi, 2010; Z. Pan & Kosicki, 2001). Such frames may be labeled *selection emphasis frames*, as they include a selected set of new thematic information (see **Figure 3**).

Figure 3. Types of frames in political messages including the differentiation between selection emphasis frames and salience emphasis frames



However, the previous subchapter (see **Subchapter 2.8.1**) showed that studies employing such selection emphasis frames tend to overstate the effectiveness of the frame itself, because the effects could likewise originate from the confounding with additional thematic information (Leeper & Slothuus, 2017). As the aim of the study discussed in this book is to assess citizens' susceptibility to framing effects and its implications for citizens' rationality in attitude formation as clear as possible, a type of emphasis frames that does not include the adding of new thematic information while being externally valid is needed. This type may be introduced to the literature as *salience emphasis frames* (again, see **Figure 3**).

Definition of salience emphasis frames

Salience emphasis frames can be defined as *frames that explicitly contextualize new thematic information by using cross-thematic concepts of interpretation such as political values to offer an evaluation of this thematic information without adding new or altering existing thematic information but by explaining the issue with already known frame-related patterns of interpretation*. This definition includes several important aspects that need further theoretical explanation.

First, as do most other framing definitions, the definition recognizes salience emphasis frames as a communicative independent variable with certain characteristics in a (political) message (e.g., Slothuus, 2008, also see **Subchapter 2.1.2**) and not as a psychological process or individual outcome, as some other authors define frames (e.g., Nelson & Oxley, 1999).

Second, such frames are applied to *new thematic information*. If frames encourage citizens "to understand events and issues in particular ways" (Kinder, 2003, p. 359), there first needs to be an event or issue a frame can make sense of. New thematic information about these issues or events is not part of the frame, but what is framed. This can be a policy measure, news event or political development, for example. New thematic information is tied to the issue and provides substantive issue-specific information such as facts about what happened or is supposed to happen and this thematic information should remain the same regardless of the emphasis frame. The following are examples of substantive thematic information: A new labor market law will give employment to 10,000 long-term unemployed persons and cost the national budget 150 million dollars; in Siberia, new large-scale gas deposits have been found; at the next G20 summit, China and the US will negotiate the withdrawal of troops from the Pacific. If this information is new to a person and entails "the supply of arguments and evidence" (Kinder, 2003, p. 367), it can be a means of persuasion. That is, a communicator can provide *new* thematic information to elicit an information-based persuasion effect in the audience in contrast to an emphasis framing effect that does not provide new issue-specific information (Leeper & Slothuus, 2017; Nelson, Oxley et al., 1997).

However, it must be scrutinized whether such issue-specific information sometimes already contains frames. Emphasis frames typically consist of different frame elements such as problem definitions, causal interpretations, moral evaluations, and treatment recommendations (Entman, 1993). Together, these frame elements construct the entire emphasis frame in a message, which compared to a single frame element, is a comprehensive pattern of interpretation (Kaiser & Kleinen-von Königslöw, 2017, 2019; Matthes & Kohring, 2008). That is, when looking at messages, entire frames consisting of several frame elements can be differentiated from single thematic information (i.e., a single frame element).

Nevertheless, when looking at the effects of single frame elements and entire frame patterns, even a single sentence containing issue-specific information related with a frame can be sufficient to evoke an interpretation with the entire frame "if it comports with the existing schemata in a receiver's belief systems" (Entman, 1993, p. 53). If, for example, the

substantive thematic information regarding the aforementioned new labor market law is that the law costs the national budget 150 million dollars, this can potentially lead to an interpretation under the superordinate "economy" value emphasis frame, because the cost argument is a subset of the frame. This example illustrates that even new thematic information and facts are not always free from frame-related patterns of interpretation (Druckman & Bolsen, 2011). However, even if issue-specific information can potentially evoke a frame-related interpretation, the difference to the proposed salience emphasis frame is the degree to which it explicitly sets the frame in the message, which makes *not explicitly framed thematic information* and *explicit salience emphasis frames* still distinguishable. This is most evident when examining the next aspect of the proposed definition.

The third facet of the definition is that salience frames *explicitly contextualize* thematic information *by using cross-thematic concepts of interpretation such as political values to evaluate the thematic information*. In contrast to thematic information that simply presents basic facts about a specific issue or event without an explicit evaluative component (e.g., the policy costs 150 million dollars), salience emphasis frames explicitly "diagnose, evaluate, and prescribe" (Entman, 1993, p. 52) how to understand the thematic information. That is, this type of frame states directly what the important standard of evaluation is for the issue and explicitly offers a context for interpretation, which goes beyond the thematic information itself. It relies on cross-thematic patterns of interpretation applicable to many issues such as basic political values that fulfill the prerequisite of cultural resonance, which is one of the defining criteria of frames proposed by Entman et al. (2009) in contrast to classic persuasion messages based on a single argument (also see Matthes & Schemer, 2012).

Furthermore, cross-thematic principles of interpretation enable fulfilling the last and most important aspect of the offered definition of salience emphasis frames: externally valid framing *without adding new or altering existing thematic information* to avoid confounding emphasis frames and thematic information. Here, cross-thematic concepts such as political values can offer a context for interpretation *by explaining the issue with already known frame-related patterns of interpretation*. Such frames do not need to add new thematic information to give particular meaning to the topic (e.g., adding the issue-specific information that other than the cost of 150 million dollars, a comparable labor measure in another country was only modestly effective in providing long-sustained employment), because this type of frame can remind people of the basic cross-thematic interpretative patterns they already know. As **Chapter 2.5** showed, widely known political values such as safety, liberty, or civil rights can serve as cross-thematic patterns of interpretation, as they can be meaningfully applied to various political issues. Thus, political values are an important means by which salience emphasis frames can construct the meaning of issues without necessarily providing new thematic information.

In the example of the new labor market law, the salience emphasis frame could state that the costs of the new policy are a problem because it endangers the goal of a debt-free national budget (problem definition and causal interpretation), which is highly important for the current and following generations (moral evaluation), and thus should not be

implemented (treatment recommendation). This contextualization is independent of the specific issue, does not provide any further facts about the issue (i.e., the labor market law), and can be similarly applied to many further issues (e.g., a planned space mission to Mars, tax reductions for citizens with a high income, subventions for green energy).

The important difference between this conception and the approach by Leeper and Slothuus (2017) is that the frame not only emphasizes which dimension should be considered important in evaluating the issue (see **Subchapter 2.8.1**). The salience emphasis frame also explains *why* this dimension is important using cross-thematic and known frame-related interpretations for potentially all four frame elements: problem definition, causal interpretation, moral evaluation, and treatment recommendation (cf. Entman, 1993). This should have higher external validity than the very short frame manipulations used by Leeper and Slothuus (2017).

However, not adding any further issue-specific information is only one important feature of salience emphasis frames. The second is that the frame does not alter or drop thematic information to avoid confounding the frame emphasis with omitted or changed thematic information, as selection emphasis frames do. In other words, despite that one frame contextualizes a subset of the thematic information with a specific political value and another frame contextualizes another subset of the thematic information with another political value, the subset not further contextualized by a frame must be part of the thematic information given to the audience to have *constant issue-specific information* across emphasis frames with different salience.

Of course, it can be argued that the salience emphasis frames proposed here are not completely free of information, because the explanation contains information about the importance of the evaluation standard (e.g., like every policy that costs money, the new labor market law endangers a debt-free national budget). This point is valid, but the important aspect of the definition is that the frames are free of new or adjusted issue-specific information and only contain cross-thematic information already known by the audience. That is, such frames do not change the informational basis of the issue, and attitude formation relies on the same facts about the issue. The facts in the example of the new labor market law are the same regardless of the frame: the new law will give employment to 10,000 long-term unemployed persons and costs the national budget 150 million dollars. As such, salience emphasis frames fulfill the central definition of frames that "supply no *new* information" but "*organize* – or better, *reorganize* – information that citizens already have in mind" (Kinder, 2003, p. 359).

As the frames must employ known information, salience emphasis frames that do not provide new issue-specific information must be cross-thematic and not issue-specific, because the interpretation standard must be known from other topics. Therefore, they are categorized as a subtype of cross-thematic emphasis frames in **Figure 3**. Furthermore, one might also ask whether salience emphasis frames are the same as equivalency frames, as the definition of equivalency frames is also based on the idea that the same substantive thematic information is framed (Kahneman & Tversky, 1984; Tversky & Kahneman, 1981).

However, the difference between both concepts is how the frames for this thematic information are constructed. Equivalency frames are highly subtle and free from any further information, but they use "different, but logically equivalent, words or phrases" (Druckman, 2001a, p. 228) such as a policy will lead to 95% employment vs. the same policy will lead to 5% unemployment.

While such frames are present in real political communication processes (e.g., Koch & Peter, 2017), they apply only to few situations because political actors do often not limit their communication behavior to presenting logically equivalent frames without providing any further information (D'Angelo et al., 2019; de Vreese & Lecheler, 2012; Slothuus, 2008; Sniderman & Theriault, 2004). In contrast, salience emphasis frames are more externally valid, because these frames do not restrict the provision of any further information, but only of further or changed substantive issue-specific information. That is, salience emphasis frames can provide different cross-thematic and known information that does not have to be logically equivalent but can emphasize different aspects. All that must be equivalent is what is framed, i.e., the substantive thematic information.

Compared to selection emphasis frames, which employ different issue-specific information, the constant thematic information of salience emphasis frames brings the concept closer to equivalency framing, as demanded by critics of the emphasis framing approach (e.g., Cacciatore et al., 2016; D. A. Scheufele & Iyengar, 2017). However, they still differ from equivalency frames. In short, equivalency framing is concerned with *how* exactly the same thematic information is presented using frames fully free of additional information. Salience emphasis frames explain in using already known cross-thematic information *why* one aspect of the same thematic information is more important in evaluating the issue or event. Finally, selection emphasis framing is about *what* (new) thematic information is selected and presented for the same topic.

Another important aspect of the proposed definition of salience emphasis frames is more implicit: the *relation between issue-specific information and cross-thematic frames*. To ensure a salience emphasis frame can contextualize thematic information, this information must be a subset of the superordinate frame. This enables the respective salience emphasis frame to meaningfully contextualize this piece of information. For example, if an issue does not contain any information about environmental aspects (e.g., a new policy for care for the elderly), an environmental frame cannot contextualize the issue meaningfully because there is no thematic information the frame could make salient. That is, thematic information about an issue must consist of at least one (less explicit) frame element for a salience emphasis frame to establish an explicit and complete pattern of interpretation. In other words, a frame must be applicable to the thematic information. On a side note, this is not a special feature of salience emphasis frames. The same is true for selection emphasis frames for which topics must also "can be viewed from a variety of perspectives" (Chong & Druckman, 2007b, p. 104) so that different frames are applicable to the issue (Chong & Druckman, 2007a).

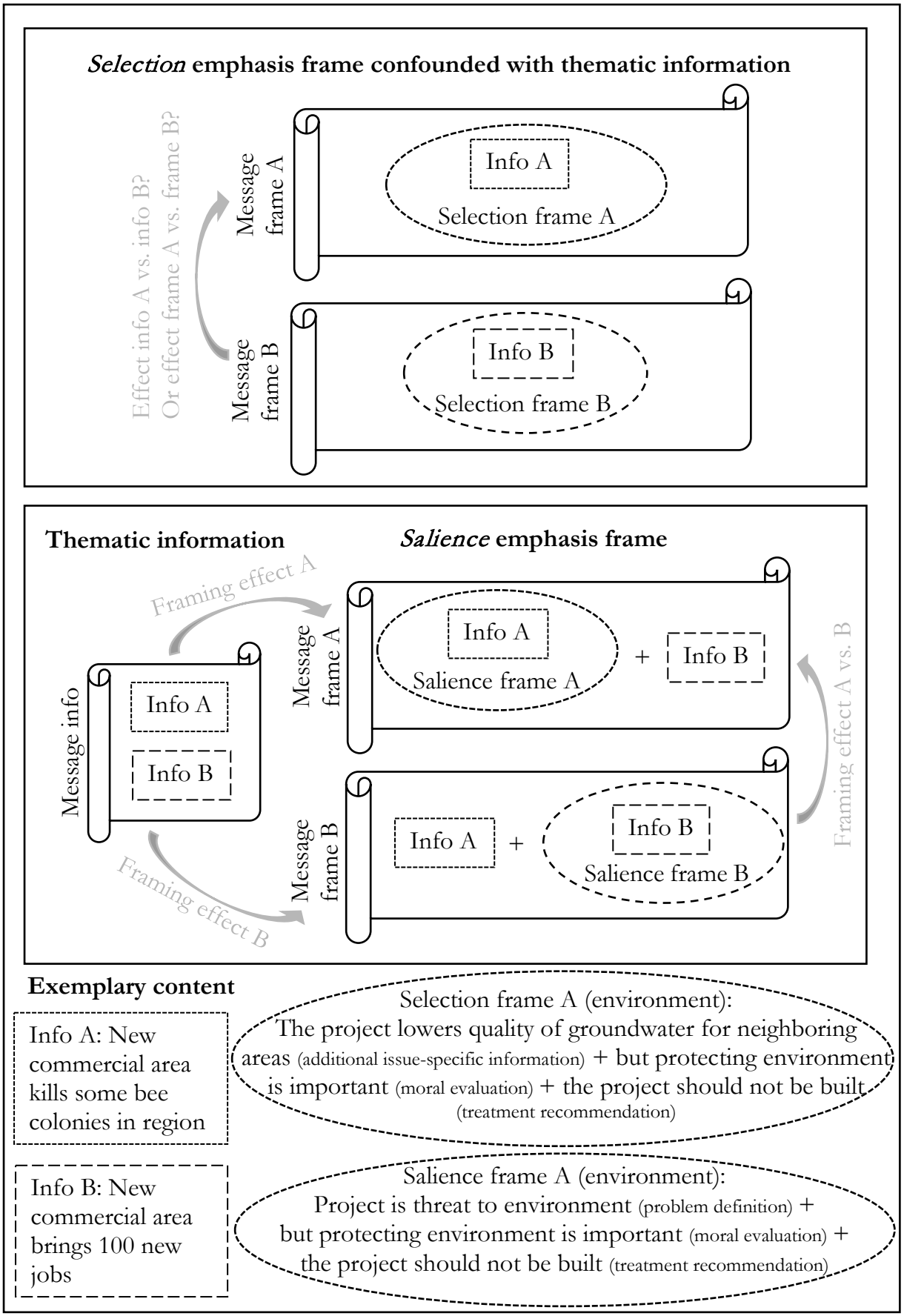
Last, the proposed conception of salience emphasis frames enables a more rigorous test of citizens' rationality in attitude formation under framing conditions than does selection emphasis framing. As already outlined in **Subchapter 2.8.1** before, varying thematic information in selection emphasis frames means that attitudinal effects based on exposure to different frames do not necessarily imply irrational attitudinal shifts, but may always be the result of learning from the new information contained in the selection emphasis frame. However, salience emphasis frames can test for irrational attitude formation. Such frames only employ already known patterns of interpretation and thus, citizens exposed to different salience emphasis frames that frame constant new thematic information do not differ in the information potentially available to them to form their issue attitude. If exposure to a certain salience emphasis frame still leads to a different issue attitude than exposure to another frame, then these differences rely in arbitrarily and irrationally on the more salient frame, despite that all information is constant, the new information, which is framed, and the already known information highlighted by the salience emphasis frame.

Applying the definition to an example

Figure 4 summarizes the main idea of the proposed definition of salience emphasis frames in comparison to selection emphasis frames using another example to show that this definition applies to various political issues and can disentangle the effects of new issue-specific information and cross-thematic salience emphasis frames. We consider the plan of a regional government to build a new commercial area in a rural environment. Two basic facts are characteristic of this project (i.e., thematic information). On one hand, some of the few wild bee colonies of this region populate the area where the government plans to build the new commercial park, and the project would kill some of these bee colonies (issue-specific information A). On the other hand, the new commercial area provides space for the settlement of new companies, which will create 100 new jobs in the region (issue-specific information B).

A message with the selection emphasis frame A "environment" only presents the basic thematic information related to the frame and mentions that some of the wild bee colonies would be killed through the project, while nothing is said about the creation of new jobs. Moreover, the selection frame may add additional issue-specific information such as the fact that many trees must be felled for the new buildings or the commercial park negatively impacts the groundwater for neighboring areas. Next, it would frame this information and define the project as a threat to the environment (problem definition and causal interpretation), clarify the importance of protecting the environment (moral evaluation), and argue that the project should not be realized (treatment recommendation).

Figure 4. Schematic illustration of thematic information and frames in messages with selection emphasis frames and with salience emphasis frames



In contrast, the message with the competing selection emphasis frame B "economy" would not mention any of this issue-specific information, but fully rely on other thematic information. The frame message would mention that the project would create 100 new jobs for the region, that most of these jobs would be very well paid because prestigious companies agreed to move to the commercial area, and that local construction companies would do most of the construction work (additional issue-specific information). The message would then frame this thematic information and define the project as a boost to the economy (problem definition and causal interpretation), clarify the importance of fostering economic growth (moral evaluation), and argue that the project should be realized (treatment recommendation). Because of the different thematic information used in the two selection emphasis frame messages, it would be difficult to decide what brought about different attitudinal effects: the different issue-specific information (info A vs. info B) or differently offered frame interpretations (frame A vs. frame B).

This problem does not occur when the new commercial area is framed with salience emphasis frames, because the messages with the different frames contain the same fundamental thematic information. Both differently framed messages would contain the issue-specific information that the project would kill some of the wild bee colonies currently populating the area (information A), and that the new commercial area will create 100 new jobs in the region (issue-specific information B). The message with the environmental salience emphasis frame (frame A), however, would then focus on information about the bees and explicitly contextualize it with the known and cross-thematic pattern of interpretation of protecting the environment without adding further issue-specific information about the project. Specifically, this framed message would explain that the expected destruction of the wild bee colonies by building the new infrastructure project is a threat to the environment (problem definition and causal interpretation), but protecting the environment is important and should be the central goal of any political action (moral evaluation). Thus, it would be better not to realize the commercial area (treatment recommendation).

In contrast, a message with the economic frame (frame B) would make salient the other aspect of the thematic information (i.e., the creation of 100 new jobs) without concealing information about the projects' negative effect on the environment. It would define the project as a boost to the economy (problem definition and causal interpretation), clarify the importance of fostering economic growth (moral evaluation), and argue that the project should be realized (treatment recommendation).

By holding the substantive issue-specific information constant, one can estimate the unique effect of the environment frame compared to the economy frame (framing effect A vs. B) on citizens' issue attitude toward the new commercial area. This would not be possible with selection emphasis frames that confound frames with issue-specific information. Another advantage of salience emphasis frames is that it is not only possible to compare the effects of two frames but also to contrast the effects of each single frame (framing effect A and framing effect B) with situations without explicit frames that include

only the presentation of substantive issue-specific information (message info). As such, the attitudinal effects of different political tools can be compared (cf. Leeper & Slothuus, 2017): of persuasion through providing new thematic information and of salience emphasis frames through contextualizing this information.

Summary

This subchapter introduced salience emphasis frames as an externally valid type of framing that is not confounded with issue-specific information but uses known cross-thematic contextualizations such as political values to frame an issue. This allows estimating the unique effect of frames, which enables better assessing citizens' susceptibility to framing effects and the rationality of their attitude formation. Moreover, the proposed separation of issue-specific information and cross-thematic frames that contextualize this thematic information creates further possibilities to test the effectiveness of frames in different settings. This is explained next in **Subchapter 2.8.3**.

2.8.3 Salience emphasis frames, new thematic information with varying argument strength, and citizens' political value preferences

The last two subchapters explained the importance of the differentiation between issue-specific information and cross-thematic frames and highlighted that testing the unique effects of *different salience emphasis frames* requires constant thematic information (see **Subchapter 2.8.1** and **Subchapter 2.8.2**). Disentangling issue-specific information and frames on the theoretical level also creates further possibilities to better assess the influence of salience emphasis frames on the formation of political attitudes. Specifically, this differentiation enables testing the effects of the *same cross-thematic frame* in different issue-specific informational settings, which can improve understanding of when – i.e., for which thematic information – a frame can affect issue attitudes. That is, the question of whether a salience emphasis frame can influence issue attitudes at all can be expanded to that of under what informational conditions such framing effects occur, which allows a more detailed examination of the effectiveness of frames.

For example, does a civil rights frame only influence issue attitude when contextualizing a surveillance law that allows the government to surveil all citizens without suspicion and approval by a judge? In other words, when thematic information about the law entails a factual strong restriction of civil rights. Or does the same civil rights frame also influence issue attitude when contextualizing a surveillance law that only allows the surveillance of a citizen when a judge decides there is valid suspicion that this person plans a crime, i.e., when the thematic information is that the law only marginally restricts civil rights?

This example illustrates that thematic information itself can contain issue-specific facts and arguments (surveillance of all citizens without suspicion vs. surveillance of an individual citizen based on the decision of a judge that valid suspicion exists) that can vary

in terms of how strongly it influences citizens to have a specific issue attitude. Without additional framing and only based on the thematic information, citizens would likely oppose the harsher mass surveillance more strongly than the law that only allows the government to surveil citizens in limited and justified situations. In other words, thematic information can itself have a particular *issue-specific argument strength* and thus varying degrees of persuasiveness other than the influence of an explicit salience emphasis frame.

Thematic information with varying argument strength and cross-thematic frames

The analysis of the persuasive effects of the argument strength of thematic information has a long tradition in social psychology, is one of the message features most commonly manipulated in persuasion research (Zhao, Strasser, Cappella, Lerman, & Fishbein, 2011), and is a key feature of the well-established elaboration likelihood model (Petty & Cacioppo, 1986). Issue-specific arguments can be defined as "bits of information contained in a communication" that allow a person to determine the "true merits of an advocated position" (Petty & Cacioppo, 1986, p. 132). This is so because not all issue-specific arguments contained in thematic information are equally persuasive in generating a specific attitude toward the attitude object. Rather, they differ in argument strength (or quality).

Two different theoretical approaches capture the concept of issue-specific argument strength. The less common normative approach tries to explain what makes a particular argument strong by using formal logic (e.g., Hahn & Oaksford, 2006; Hoeken, Timmers, & Schellens, 2012). According to this approach, strong arguments avoid fallacies, point out desirable or undesirable consequences that occur with specific probabilities, and use analogies. However, these rather abstract criteria, which are derived from formal logical equations, mainly explain what *should* be a strong argument based on logic, but they explain less what a strong argument *is* for those who receive the argument.

Here, the empirical approach to argument strength comes into play (e.g., Petty & Cacioppo, 1986; Zhao et al., 2011). It simply defines argument strength as how persuasive and compelling a receiver judges a specific argument to have a specific attitude when this argument is presented in isolation (i.e., without any peripheral cues or additional information). Strong arguments are those that receivers evaluate as compelling and elicit more favorable thoughts to follow the direction of the argument when forming an attitude. In contrast, weak arguments are judged as less persuasive and generate more unfavorable thoughts regarding the attitude direction suggested by the argument (Petty & Cacioppo, 1986). This empirical approach is much more common in the literature because it offers a testable reference for when an argument is strong (i.e., the judgment of the receivers). Thus, this study also follows this definition. Numerous persuasion studies applying this definition have shown that citizens base their attitude formation on the strength of arguments presented on a specific topic (e.g., Park, Levine, Kingsley Westerman, Orfgen, & Foregger, 2007), and more so, when arguments are carefully processed, as proposed by the elaboration likelihood model (for a meta-analysis, see Carpenter, 2015).

Often, persuasion studies manipulate argument strength as the factual and inherent properties of an attitude object. For example, a consumer product with compelling or less compelling technical features (Petty, Cacioppo, & Schumann, 1983), an educational policy that is more or less effective in motivating teachers and students to invest more effort in their courses (Nelson & Garst, 2005), or nutrition that saves money or is rather expensive (Fabrigar, Priester, Petty, & Wegener, 1998). That is, argument strength is often designed and tested as the isolated persuasiveness of facts about an object, issue, or event. This means that facts about an issue or event, introduced as thematic information in the previous subchapter (see **Subchapter 2.8.2**), can be itself more or less persuasive without considering explicit framing of this issue-specific information. In other words, the argument strength of thematic information can vary for a specific issue position, termed by Leeper and Slothuus (2017) as the "information hypothesis" (in contrast to the "framing hypothesis"). For instance, a new law concerned with pensions can improve the situation of retired persons slightly (i.e., a thematic information with a weak issue-specific argument strength for supporting the law) or significantly (i.e., a strong issue-specific argument for supporting the law), the reduction of CO2 through a specific governmental subvention for green energy can be factually substantive or marginal, or the costs of building a new national theatre can be de facto moderate or high.

People form different baseline attitudes depending on the argument strength of issue-specific information (Leeper & Slothuus, 2017). Introducing this baseline effect of thematic information enables better assessing when an additional cross-thematic salience emphasis frame is able to influence attitudes. Is this when thematic information has strong argument strength for the issue position of the frame or also when the argument strength of issue-specific information is low for this position? Introducing argument strength as a property of thematic information is not only important in understanding the informational conditions of framing effects but also helps better assess citizens' rationality in attitude formation. If a salience emphasis frame can influence attitudes despite that information and facts about an issue only have a low argument strength for the issue position of the frame, then the importance citizens give to substantive thematic information (i.e., factual issue content) must be questioned, which is a central prerequisite for judging attitude formation as rational (see **Subchapter 2.8.1**).

Furthermore, argument strength – here defined as the persuasiveness of thematic information not explicitly framed – should not be confused with "frame strength," which is sometimes used in the literature to explain the different degrees of applicability of different (cross-thematic) frames for the same issue (e.g., Chong & Druckman, 2007c, 2007a). For instance, studies on frame strength ask whether an environmental frame is more effective in changing citizens' attitude about a new infrastructure project than an economic frame, elitist frame, or security frame (see **Subchapter 2.4.2**). Argument strength, in contrast, is not about how well a cross-thematic frame contextualizes an issue, i.e., issue-specific information. It is about how compelling thematic information is in having a specific issue position. A cross-thematic salience emphasis frame is not part of the conception of

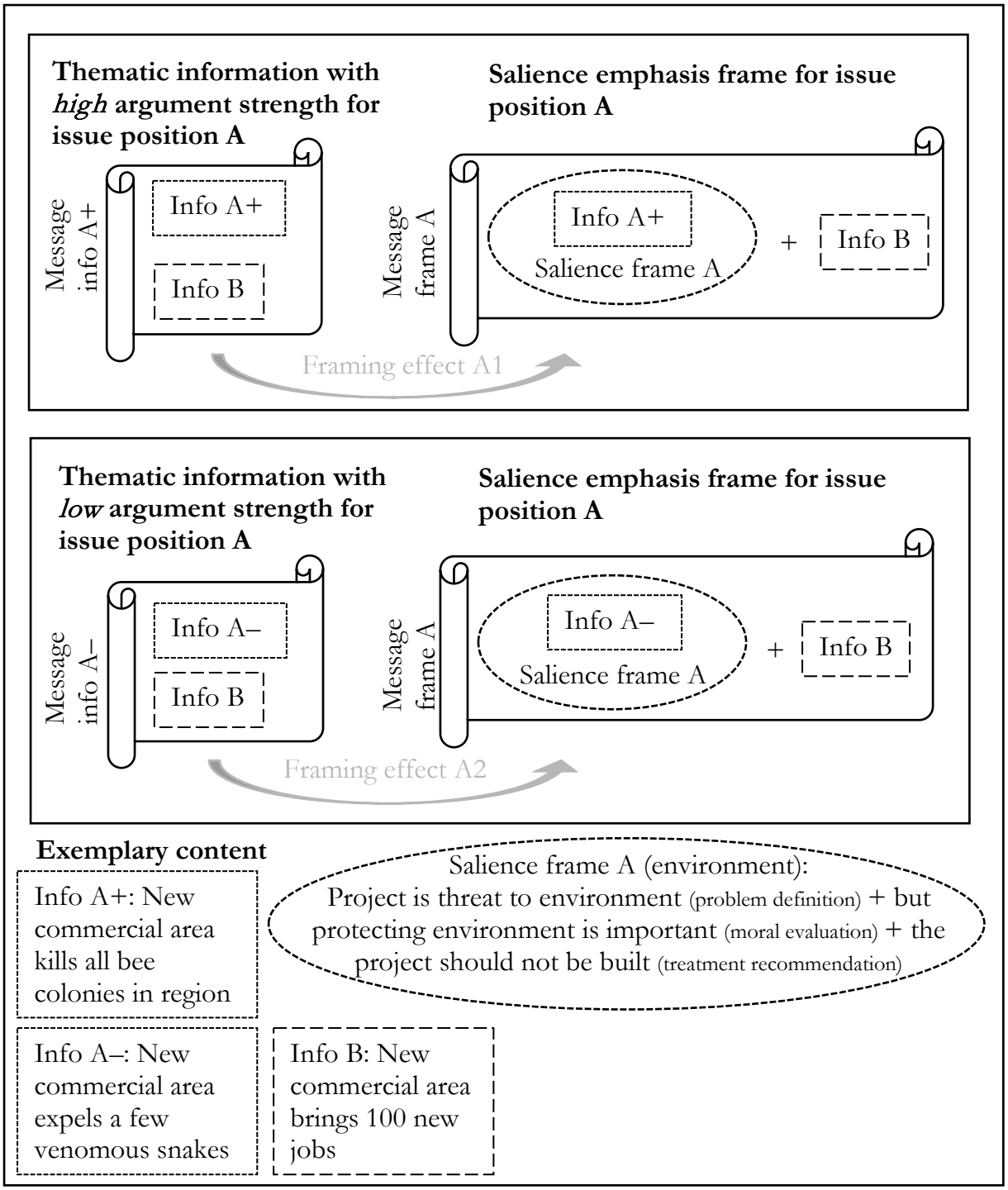
issue-specific argument strength, but can be understood as an external factor that can contextualize thematic information with high or low issue-specific argument strength for the specific issue position suggested by the frame.

Using the example of the new commercial area already described in detail in **Subchapter 2.8.2**, **Figure 5** illustrates the idea of applying the same salience emphasis frame to thematic information with varying argument strength for a specific issue position. Assume that the regional government considers two different locations in the countryside to build the new commercial area. Regardless of which location the government chooses, building the commercial park would bring 100 new jobs to the region (thematic information B). However, all the region's wild bee colonies live in one of the considered locations. These bees are very important for the biodiversity of the region because they pollinate the flora and thus ensure the survival of many other species. Building the new commercial area at this location would kill all bees because construction would pollute the dust that agglutinates the wings of the bees, which will no longer be able to fly (thematic information A+). That is, the thematic information countering the new commercial area contains rather high argument strength for opposing the new commercial area by showing that the negative effects on the environment are very strong (high argument strength for issue position A, i.e., for opposing the new commercial area).

In contrast, the second location the government considers for the new commercial park houses only some venomous snakes, which are very prevalent in the whole region and thus not as important for biodiversity. Building the new commercial area at this location would displace these few snakes, but because they are a very adaptive species, experts are sure they would easily settle somewhere far in the countryside (thematic information A–). Put differently, the argument strength of this thematic information against building the new commercial park is rather weak, because the negative influence on the environment is rather low (low argument strength for issue position A).

Now, the same cross-thematic salience emphasis frame environment (salience emphasis frame A) comes into play and explicitly contextualizes the two options the government considers for building the new commercial area (message info A+ vs. message info A–). In both cases, this frame does not add any further issue-specific information, but simply defines the project as a threat to the environment (problem definition), clarifies the importance of protecting the environment (moral evaluation), and concludes that the government should not realize the project (treatment recommendation). That is, the frame suggests opposing the commercial park (issue position A) when thematic information once has high argument strength for opposing the project and once has weak argument strength. This makes it possible to compare the effect of the same frame in different informational settings (framing effect A1 vs. framing effect A2).

Figure 5. Schematic illustration of varying argument strength of thematic information and its contextualization with a salience emphasis frame



However, introducing argument strength as a characteristic of thematic information not only enables testing the effectiveness of the same frame under different issue-specific argumentative constellations (i.e., assessing the magnitude of framing effects by issue-specific argument strength), but also whether and how the influence of argument strength varies through an explicit salience emphasis frame. This is elaborated next.

Motivated reasoning and issue-specific argument strength

As explained, one defining aspect of the argument strength of issue-specific information is that this strength of arguments is a perceptual phenomenon. That is, a strong argument is strong because "the vast majority of a specifiable population" judges it as being compelling information (Petty & Cacioppo, 1986, p. 133). However, not all citizens assess equally the same issue-specific argument as strong or weak, but base this on their individual preferences (e.g., political value preferences or party preferences), which is called biased processing or *motivated reasoning* (Bolsen, Druckman, & Cook, 2014; Druckman & Bolsen, 2011; Kunda, 1990; Taber et al., 2009; Taber & Lodge, 2006).

How strongly citizens engage in motivated reasoning when assessing the strength of an issue-specific argument, namely how differently different people judge the strength of the same argument, depends on their motivational state. For example, if the internal accuracy motivation of citizens is high enough to "correctly" judge argument strength, then the degree of motivated reasoning is low and all citizens with high accuracy motivation will judge argument strength rather equally despite differences in their individual (political) preferences (Bolsen et al., 2014; Taber & Lodge, 2006). If, in contrast, citizens follow directional goals such as reinforcing existing opinions or defending their own identity, then the degree of motivated reasoning is higher when assessing the strength of issue-specific arguments (Bolsen et al., 2014; Taber & Lodge, 2006). This increases the differences in the evaluation of the strength of the same argument depending on the persons' preferences.

External factors can influence how strongly people follow directional goals and thus engage in motivated reasoning. If issue-specific arguments are presented in an isolated way without additional external factors, the degree of motivated reasoning is lower, and people tend to follow strong rather than weak arguments when forming their attitude, while their individual preferences play only a minor role (Druckman et al., 2013). However, when additional external factors emphasize the relevance of issue-specific arguments for one's own identity, citizens follow the argument related with their identity, regardless of whether the argument is strong or weak. If, for instance, the arguments are accompanied by explicit party endorsements and are about a polarizing conflict issue (Slothuus & de Vreese, 2010), or participants are told that parties are polarized about the issue (Druckman et al., 2013), respondents tend to follow the argument of their preferred party, regardless of whether this party presents a strong or a weak argument (Druckman et al., 2013). As such, party cues can be a relevant external factor that induces motivated reasoning about issue-specific arguments by making one's own (political) identity more relevant in the evaluation of the arguments (Bolsen et al., 2014).

It can be assumed that salience emphasis frames that use political values to contextualize issue-specific arguments are also an external factor that increases motivated reasoning more than do situations with isolated arguments. This is because such frames emphasize the relevance of one's own political value preferences, which is an important aspect of political identity (Conover & Feldman, 1984). Salience emphasis frames likely increase motivated reasoning when the political value emphasized in the frame matches the

political value preference of citizens, i.e., when the frame is value-resonant. In such value-resonant situations, the frame makes one's own identity explicitly salient, which increases the directional goal of defending prior beliefs (Taber & Lodge, 2006), namely of defending the appropriateness of this preferred political value in contextualizing issue-specific argument strength. Through this increased motivated reasoning triggered by a value-resonant frame, the argument strength of thematic information is likely processed in a more biased way. Thematic information dissonant to one's own value-resonant frame should be counter-argued and dismissed, while issue-specific information consonant with one's own frame should be perceived as stronger and more compelling (i.e., motivated reasoning will lead to a disconfirmation bias and a prior attitude effect, see Bolsen et al., 2014).

This will likely alter the effect of issue-specific argument strength and people will no longer follow the stronger argument to form their issue position, as they would do when no value-resonant frames but only thematic information are present. In contrast, they may follow "their" value-frame in the same manner, regardless of whether this frame contextualizes only a weak argument for an issue position in the direction of the frame or a strong issue-specific argument for this position. In other words, a value-resonant frame may increase motivated reasoning so strongly that the effects of the argument strength of substantive thematic information is suppressed.

With **Figure 6** that formalizes these reflections, this is illustrated by again using the example of the new commercial area. In situations without explicit framing, citizens' attitude toward the project should differ according to the argument strength of thematic information, i.e., the location where the government plans to build the commercial area. When confronted with the issue-specific information that the new commercial area would lead to the destruction of all wild bee colonies in the region (thematic information A+), while creating 100 new jobs (thematic information B) – i.e., when they are exposed to a message containing thematic information with high argument strength for opposing the project (message info A+) – then citizens would rather oppose the government's plan to build the new commercial area (attitude direction A).

In contrast, citizens would likely support slightly the new commercial park (attitude B) when confronted with the thematic information that realizing the project only displaces some venomous snakes (thematic information A–), while creating 100 new jobs (thematic information B) – i.e., when the argument strength of thematic information is rather low for opposing the new commercial area (message info A–). As the thematic information simply presents isolated facts without explicit identity-relevant references, motivated reasoning along individual preferences should not be zero, but rather low. This suggests that people with different political value preferences follow argument strength in a rather similar way (argument effect). In other words, citizens adhering to the political value of environmentalism and those preferring economic values would more likely support the commercial area more strongly when it only leads to displacing some venomous snakes (i.e., when the argument strength for opposing the project is low) than when it kills all wild bee colonies in the region (i.e., when the argument strength for opposing the project is high).

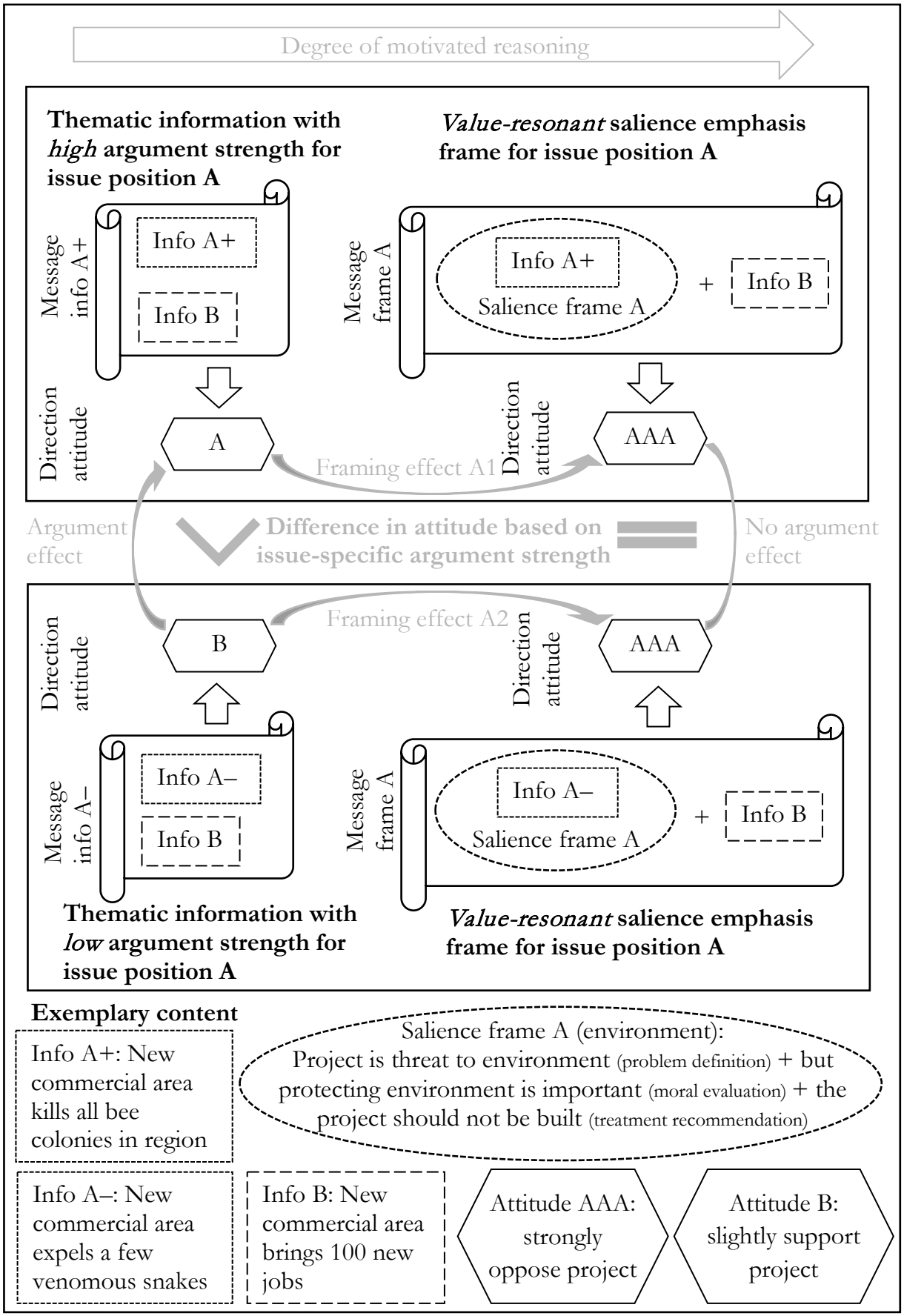
When, however, the salience emphasis frame environment contextualizes the different thematic information about the new commercial area by explicitly defining the project as a threat to the environment (problem definition), highlighting the importance of protecting the environment (moral evaluation), and suggesting opposing the project (treatment recommendation), the picture would change for citizens adhering to the political value of environmentalism, i.e., for citizens for whom this frame is value-resonant. Exposure to "their" value-resonant frame should first lead to a framing effect, regardless of whether the frame contextualizes the thematic information that all wild bee colonies of the region will die when the project is realized (framing effect A1 for the strong argument for the issue position of the frame) or the issue-specific information that the project will displace some venomous snakes (framing effect A2 for the weak argument). As mentioned in **Subchapter 2.5.3**, this is because a frame that matches citizens' preexisting political values will generally be considered appropriate and applicable (A. C. Andrews et al., 2017; Schemer et al., 2012; Shen & Edwards, 2005).

Moreover, value resonance should increase motivated reasoning about the argument strength of the thematic information, and citizens preferring environmentalist values will likely interpret this information with the directional goal of defending the appropriateness of their frame to contextualize the information. This will decrease the influence of the argument strength of the thematic information until the effect of argument strength is fully suppressed (no argument effect). These citizens would strongly oppose the new commercial area at the same magnitude when contextualizing that all bees will die (direction attitude AAA) and when some venomous snakes will be displaced (issue attitude AAA). This is because these citizens follow "their" frame to interpret the thematic information, and this frame clearly explains both argument strengths as a relevant threat to the environment.

Given that these assumptions are correct and supported by empirical results, this would be an even stronger indicator for the effectiveness of salience emphasis frames. It would imply that such frames are not only effective in different informational settings (i.e., when contextualizing thematic information consisting of strong arguments for the position of the frame, but also when contextualizing weak ones), but – if value-resonant –so effective that the argument strength of substantive thematic information loses its importance in attitude formation. Only the value-resonant frame would matter, but not the issue-specific facts. Facts, which would matter, if no explicit frames were present. This result would be the strongest indicator for irrational attitude formation along ideological lines, in contrast to rational attitude formation based on substantive thematic information.

However, how strongly attitude formation takes place along political value preferences and increased motivated reasoning should not only be influenced by whether thematic information is presented in an isolated way or is contextualized with a value-resonant frame. It should also be influenced by the congruence between the salience emphasis frame and argument strength of thematic information in the message. This is discussed next in detail. Furthermore, the thus far unanswered question of what happens to the effect of argument strength when the frame is non-resonant is addressed.

Figure 6. Schematic illustration of varying argument strength of thematic information and its different effects in unframed situations and situations with a value-resonant frame



Motivated reasoning and congruence between frames and argument strength of thematic information

For messages containing a salience emphasis frame that contextualizes thematic information with varying argument strength for the issue position of the frame, a further variable emerges, namely *message congruence* (or message ambiguity). When a frame contextualizes issue-specific information with high argument strength for the attitude suggested by the frame, messages are congruent (or unambiguous). In contrast, messages are incongruent (or ambiguous) when the salience emphasis frame suggests interpretation in a direction for which the thematic information only provides weak issue-specific arguments but strong information for the opposite attitude.

In the aforementioned example, a message is congruent when the environmental frame suggests opposing the new commercial area, and the thematic information about this area is that it will kill all wild bee colonies in the region (strong issue-specific argument strength for opposing the project) and will create 100 new jobs (moderate argument strength for supporting the project). In this case, the frame and the thematic information congruently suggest opposing the project. In contrast, a message is incongruent when the environmental frame suggests opposing the project to save the environment, but the argument strength of thematic information rather suggests supporting the new commercial area because the issue-specific argument strength is weak in terms of opposing it (i.e., the project only displaces some highly prevalent venomous snakes) but moderate in supporting the project (i.e., the project will create 100 new jobs).

Message congruence influences how strongly individual preferences guide the processing of thematic information. Empirical results suggest that when message features consistently support a specific attitude direction in a compelling manner, i.e., when the message is congruent (or unambiguous), biased processing along individual preferences (i.e., motivated reasoning) is less likely. In contrast, biased processing based on individual preferences increases when messages are incongruent, i.e., ambiguous (Ziegler & Diehl, 2003; Ziegler, Dobre, & Diehl, 2007; Ziegler, Schwichow, & Diehl, 2005). Congruent messages do not include a strong conflict between competing considerations and thus should not elicit much cognitive dissonance, which otherwise must be reduced to attain a comfortable level of cognitive consistency (Festinger, 1962). Given that congruent messages are processed carefully (Chaiken & Maheswaran, 1994; Maheswaran & Chaiken, 1991), people should base their attitude on the persuasive strength of the message (i.e., the strong issue-specific argument plus the frame emphasis on this argument), regardless of their individual preferences. This is because the message does not contain aspects that could create much counter-arguing (Petty & Cacioppo, 1986).

In other words, the persuasive strength of congruent messages inhibits counter-arguing and the activation of individual preferences in interpreting the message. This leads to less biased information processing along individual preferences (Ziegler & Diehl, 2003). Note that message congruence as presented here is an inherent characteristic of the message itself and should not be confused with the consonance or dissonance between a message

and the preferences of the receiver of the message. A congruent message can be either consonant or dissonant with the receiver's preexisting preferences. However, as long as the message is compelling, dissonance will be less strongly recognized and thus, the message is less likely to lead to motivated reasoning and counter-arguing.

In contrast, incongruent messages are ambiguous and contain conflicting considerations without clear support for a specific attitude (e.g., the frame suggests the importance of a weak issue-specific argument despite the existence of compelling counter-arguments in the message). This will likely increase the receiver's cognitive dissonance, which motivates people to regain cognitive consistency (Festinger, 1962). To achieve this, citizens can use their individual preferences such as political value preferences to reinterpret the ambiguous message. As explained in **Subchapter 2.5.1**, political value preferences often help citizens interpret political issues and thus, they likely rely on these preferences to make sense of the incongruent message.

As different citizens hold different political value preferences, they likely evaluate incongruent message properties differently. They likely give more weight to the message feature aligned with their preference (i.e., either the frame or the argument strength of thematic information), while counter-arguing the message feature that contradicts their preferences to arrive at a consistent interpretation of the message. That is, message incongruence likely increases motivated reasoning about the message along political value preferences, which can polarize attitudes toward the attitude object described in the message of citizens with different political values (for a comparable effect of preferences toward politicians by message ambiguity, see Ziegler & Diehl, 2003).

Figure 7 illustrates the varying influence of political value preferences (i.e., of motivated reasoning) on attitude formation depending on message congruence. The earlier example of the new commercial area is again used to explain the expected effects. The congruent message in this example is when the environmental frame suggests opposing the project (frame A) and contextualizes the thematic information with high argument strength to oppose the new commercial area (i.e., the project would kill all wild bee colonies, thematic information A+). Both citizens with a high and low preference for environmental values would strongly oppose the project at about the same magnitude (attitude direction AAA), because message congruence would inhibit citizens from engaging in motivated reasoning. Rather, they would follow the strong issue-specific argument supported by an additional salience emphasis frame (no effect of value preference).

However, when the message is incongruent and the environmental frame suggests opposing the project (frame A), but contextualizes the thematic information with low argument strength for opposing the new commercial area (i.e., when the project would only displace some venomous snakes, thematic information A–), citizens' attitude would differ according to their political value preference. This is because they would react with motivated reasoning to the incongruence of the message to reduce the cognitive conflict elicited thereby. Citizens with a high preference for environmental values would dismiss the low argument strength for the issue position of "their" value-resonant frame

environment and still follow their frame at about the same magnitude as when the frame contextualized thematic information with high argument strength for the issue position of the frame. That is, they would strongly oppose the new commercial area (attitude direction AAA). This is the suppressed effect of argument strength due to a value-resonant frame, as explained above (no argument effect).

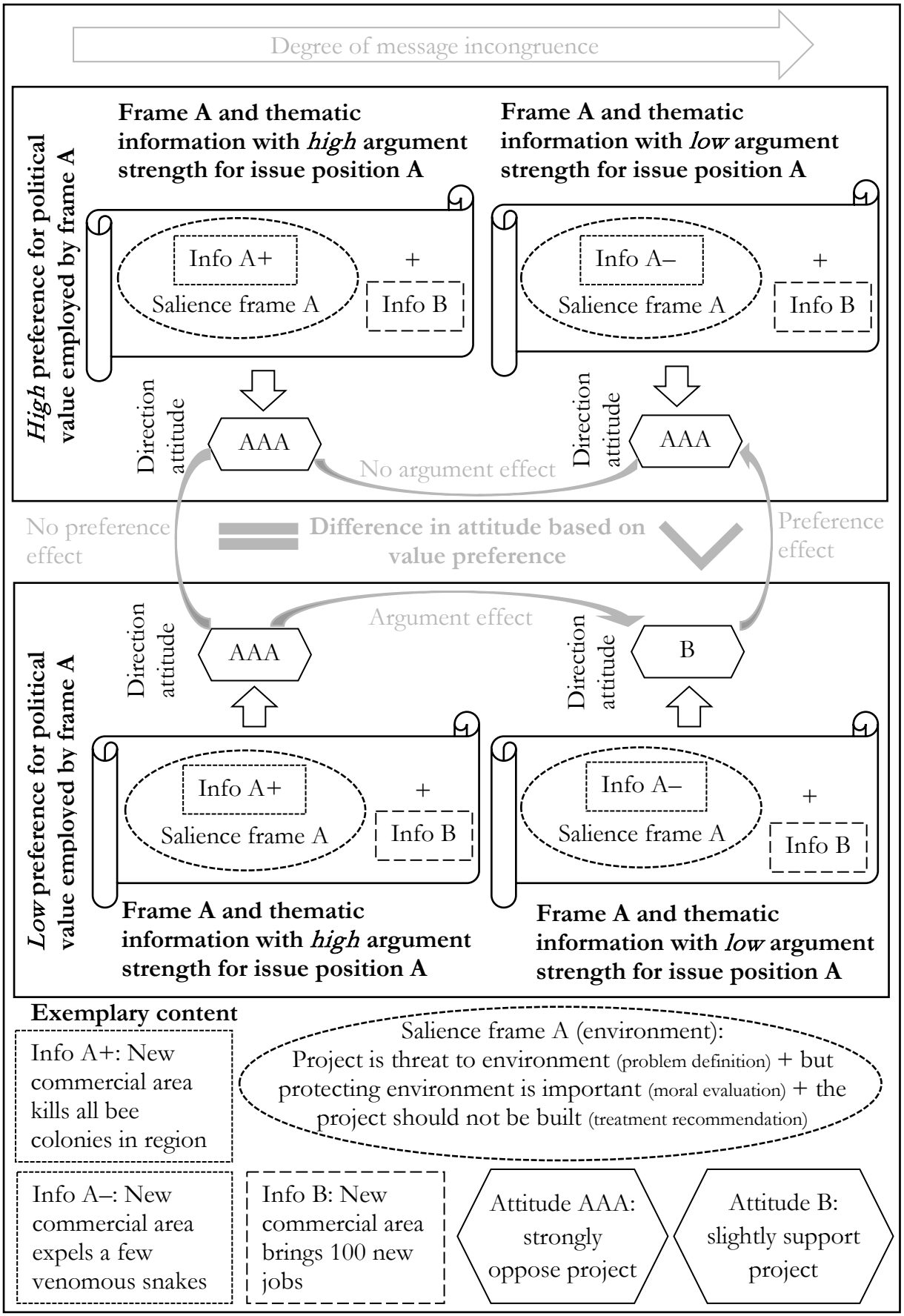
In contrast, citizens with a low preference for environmental values would reduce the incongruence of the message by rejecting the environmental frame as an offer in the interpretation of the thematic information. This is because this frame is non-resonant for these persons and thus generally less applicable for them. Instead, they would rather follow the argument strength of thematic information suggesting slightly supporting the project (attitude direction B), because it will create 100 new jobs and building the area would only displace some venomous snakes (argument effect).

That is, when the message is incongruent, citizens engage in motivated reasoning based on their value preferences to reduce the conflict between different message features. As a result citizens with a low and high preference would differ in their attitude toward the project (effect of value preference). In sum, citizens' political value preferences are especially relevant for attitude formation when the frame and the argument strength of thematic information are incongruent, but less relevant when the frame and issue-specific argument strength are congruent.

With the proposed effect of message congruence on motivated reasoning, it is now also possible to explain what happens to the effect of argument strength when framed with a *non-resonant* counter-frame that does not match citizens' value preference. The previous paragraph already explained how a value-resonant frame could suppress the effect of argument strength. However, a different pattern of the effect of issue-specific argument strength for a specific issue attitude will likely emerge when the frame is non-resonant and suggests an attitude against the direction of the varying argument. Depending on the congruence between issue-specific argument strength and the non-resonant frame, two reactions to non-resonant frames are possible.

First, when the issue-specific argument strength is weak for an attitude direction different to that suggested by the non-resonant frame (i.e., when the message congruently supports the non-resonant attitude direction), then motivated reasoning would be rather low, because even non-resonant message congruence inhibits one's own political identity from being more salient. In this case, citizens will process the weak argument strength in a less biased way and their attitude would follow the non-resonant frame.

Figure 7. Schematic illustration of (in-)congruence between argument strength of thematic information and frame and its different effects on the influence of value preferences



Second, when the non-resonant frame suggests a specific attitude but the issue-specific argument strength for the opposite attitude direction is strong, then the non-resonant frame increases motivated reasoning because the message elicits more cognitive conflict. To regain cognitive consistency, citizens for whom the frame is non-resonant would rely more on the strong issue-specific argument aligned with their values than on the non-resonant frame when forming their attitude. That is, the strong issue-specific argument against the non-resonant frame would be effective for these citizens.

Considering both situations together (i.e., congruent and incongruent messages with a non-resonant frame), the effect of argument strength of issue-specific information would persist when contextualized with a non-resonant frame. This is in contrast to situations with a value-resonant frame that suppresses the effect of argument strength (see previous paragraph on the varying effect of argument strength).

Summary

This subchapter expanded the differentiation between thematic information and cross-thematic salience emphasis frames by integrating issue-specific argument strength as a varying factor of thematic information. This enables a better assessment of the informational conditions under which frames influence citizens' attitude formation. Specifically, one can now test whether frames are only effective when contextualizing thematic information with high argument strength for the issue position suggested by the frame, or also when issue-specific argument strength is low for an attitude aligned with the frame. In addition, this conceptualization enables testing how (value-resonant) frames can alter the effectiveness of issue-specific argument strength, i.e., whether frames can suppress the effects of issue-specific facts and substantive thematic information, which would guide attitude formation without additional framing of this information.

As such, integrating issue-specific argument strength as a varying factor of thematic information allows a more accurate assessment of whether citizens' attitude formation takes place rationally based on substantive thematic information or in a way biased by frames, especially value-resonant frames that increase motivated reasoning about thematic information. Furthermore, the proposed conceptualization improves understanding of when motivated reasoning along political value preferences takes place by looking at situations in which frames and thematic information consistently suggest a specific issue attitude (i.e., when a message is congruent) and those in which frames and issue-specific argument strength are contradictory (i.e., when a message is incongruent).

Furthermore, the differentiation between thematic information and cross-thematic salience emphasis frames enables a more detailed look at the psychological mediation processes responsible for framing effects on issue attitude and may help explain the contradictory findings in the literature (see **Chapter 2.3**). The following **Subchapter 2.8.4** discusses this in more detail.

2.8.4 Introducing a new mediator of salience emphasis framing effects on issue attitude: Belief evaluation change

Explanation of contradictory findings in the literature regarding the mediation of emphasis framing effects

As described in **Chapter 2.3**, there is extensive discussion in the literature on what mediates the effects of emphasis frames on issue attitude, especially regarding whether frames change the weight given to specific beliefs about the attitude object (i.e., belief importance change) or directly alter beliefs about the attitude object (i.e., belief content change). From a theoretical perspective, the mediation occurs via changes in the importance of beliefs, not via changes in the content of beliefs (Nelson, Oxley et al., 1997). In contrast to persuasion based on the supply of new information that aims to directly change the basis of an attitude – i.e., what people know about an attitude object – emphasis frames should not alter beliefs about an attitude object but change how these beliefs are weighted (see **Subchapter 2.8.1**).

However, the empirical results regarding the mediators of framing effects are more equivocal than this straightforward theoretical assumption (for an overview, see **Table 1** in **Subchapter 2.3.4**). Studies analyzing only belief importance change indicated that it mediates framing effects on issue attitude, as expected by the theory (de Vreese et al., 2011; Nelson, Oxley et al., 1997). However, in contrast, studies testing belief importance change and belief content change in competition with each other showed that frames affect issue attitude through both paths (Lecheler et al., 2009; Lecheler & de Vreese, 2012; Nelson & Oxley, 1999; Slothuus, 2008). Only two studies confirmed that frame effects work via belief importance change and not belief content change (Druckman & Nelson, 2003; Nelson, 2004). Thus, empirical evidence that frame effects differ in their psychological mechanisms from the persuasion effects of new thematic information is limited.

Slothuus (2008) provides one explanation for the result that frames also change beliefs about the attitude object and not only the importance of beliefs. He showed that citizens' political knowledge moderates the path via which emphasis frames affect issue attitude (also see **Subchapter 2.3.3**). If citizens possess low knowledge, framing effects are generally unlikely because of their limited ability to understand the frame. If citizens possess moderate knowledge, it is more likely the frame will add new beliefs about the issue and the frame effect will be mediated via belief content change. In contrast, if people have high political knowledge, the frame will not add beliefs about the attitude object because the frame does not contain new aspects for these people. Instead, the frame alters the importance of these already known beliefs and affects issue attitude via belief importance change.

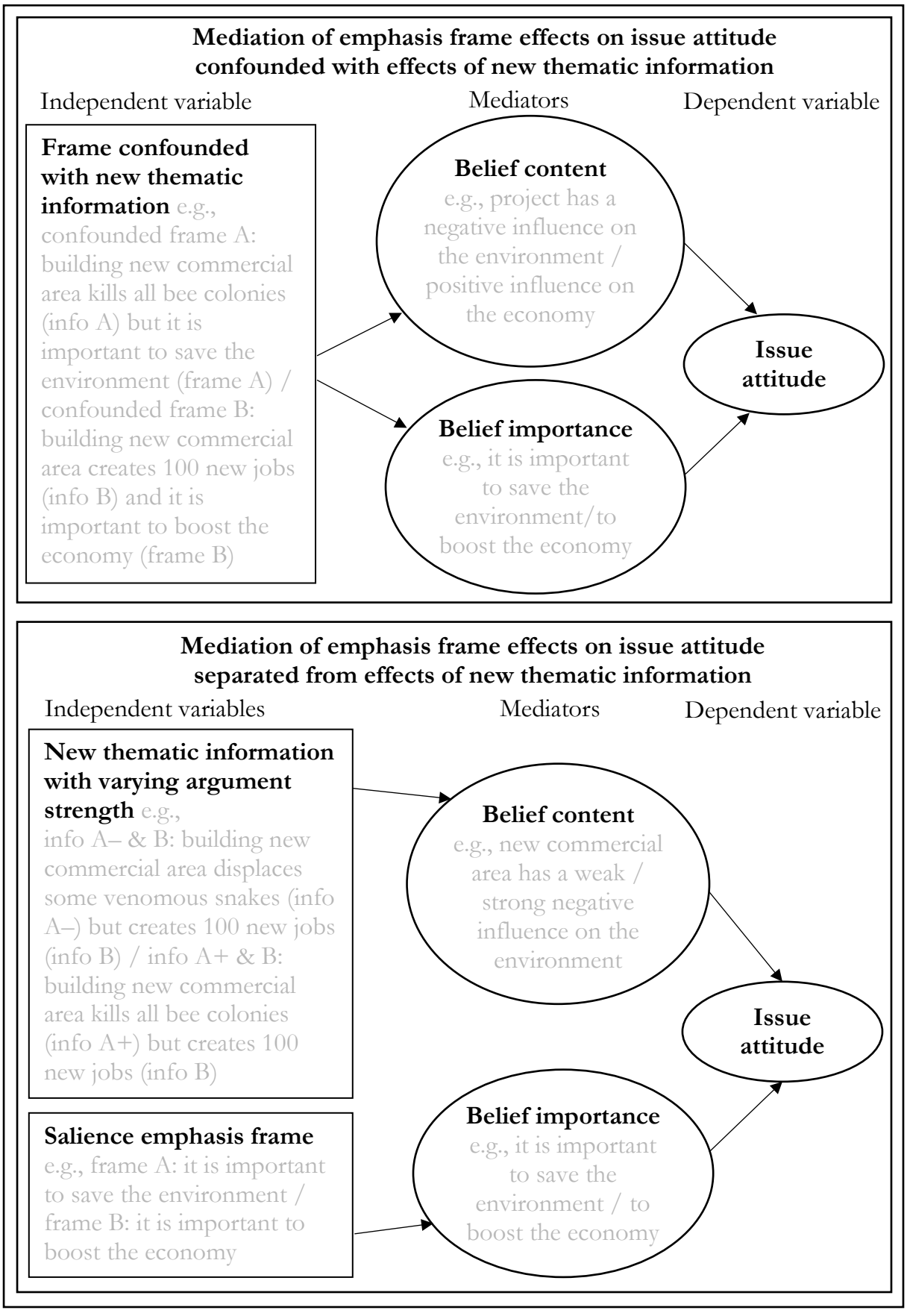
Although this is a compelling explanation, there might be another reason for the equivocal findings on the mediation process of emphasis framing effects that could likewise explain the moderated mediation proposed by Slothuus (2008). As **Subchapter 2.8.1** outlined, most framing studies confounded the construction of emphasis frames with additional new thematic information. Thus, unsurprisingly, the frame messages in these studies changed both belief content and belief importance, because the frames contained

new information that added new beliefs about the attitude object (leading to belief content change) and not only the emphasis on a specific aspect to alter the importance of this aspect in attitude formation (belief importance change).

The upper part of **Figure 8** illustrates this problem using again the example of regional government planning to build a new commercial area. The confounded message A with the environmental frame provides the new issue-specific information that the project would kill all bee colonies in the region (info A) and emphasizes the importance of protecting the environment (frame A). In contrast, the confounded message B with the economic frame contains the different information that the new commercial area would create 100 new jobs (info B) and highlights the importance of boosting the economy (frame B). Varying the thematic information according to the frame condition will likely mean that participants exposed to the economy frame will not only judge economic considerations as more important in interpreting the issue (belief importance), but also that the project's positive influence on the economy is higher (belief content) than respondents exposed to the environment frame. This is because the thematic facts in the message with the economic frame contain only the factual information that there is a positive impact on the economy (the creation of 100 new jobs). Thus, what Slothuus (2008) considered moderated mediation may actually be the results of thematic information new or not new to participants depending on their political knowledge, not the result of the frame emphasis citizens were more or less familiar with.

By separating issue-specific information and salience emphasis frames as proposed in **Subchapter 2.8.2**, the mediation processes of frame effects on issue attitude via belief importance change and belief content change can be more precisely tested. This separation enables control over what is new to participants and what is not (in contrast to broad political knowledge that is only an approximation of what citizens know about a specific topic). In an experimental setting, for example, new thematic information with varying argument strength is then a manipulated independent variable that should only influence the content of beliefs (e.g., the belief that a new surveillance law will prevent much cyber-crime or the belief that a new governmental subvention will substantially decrease emissions of CO2), but not the importance given to these beliefs. Known and cross-thematic salience emphasis frames are a second manipulated independent variable that does not contain any new thematic information. It should thus influence issue attitude via changes in the importance of the beliefs the frame emphasizes (e.g., it is important to interpret governmental surveillance based on security reasons or decreasing emissions of CO2 is important in saving the environment), but should not change beliefs shaped by the new thematic information.

Figure 8. Mediation of frame effects on issue attitude via belief content change and belief importance change when frames are (not) confounded with new thematic information



However, to determine whether the confounding with thematic information is responsible for the significant mediation of framing effects via belief content in previous studies, a mediational test that does not confound new thematic information and salience emphasis frame requires that the argument strength of thematic information is varied in a controlled setting (i.e., as an independently manipulated variable). If thematic information is constant, changes in belief content based on new thematic information could not be measured, because nothing in the thematic information could lead to differences in belief content.

Translating this into the example of the new commercial area (also see lower part of **Figure 8**), new thematic information with varying argument strength for an attitude against the project would either tell participants that building the project will displace some poisonous snakes but will create 100 new jobs (info A– & B), or that the project will kill all wild bee colonies in the region but will create 100 new jobs (info A+ & B). It could then be tested whether this changes beliefs about how strong the project's negative influence is on the environment (belief content).

As a second independent variable, known salience emphasis frames would contextualize this new thematic information by either emphasizing the importance of saving the environment (frame environment) or of boosting the economy (frame economy). This would enable testing whether these frames influence issue attitude exclusively via changes in belief importance and not also via changing beliefs about the project itself (belief content). That is, the proposed separation of salience emphasis frames and new thematic information enables better testing the unique effects of frames (see **Subchapter 2.8.2**) and whether a change in belief importance is actually responsible for this effect, as proposed by Nelson, Oxley et al. (1997).

Belief evaluation change as a further mediator of emphasis framing effects

Separating salience emphasis frames and new thematic information with varying argument strength enables a clearer test of the mediators already established in the literature. However, it also raises the question as to whether frames not only change the importance of beliefs, but also change how compelling specific beliefs are judged to have a specific issue position. Exposure to new thematic information adds beliefs to citizens' belief structure regarding an attitude object (belief content change), e.g., that a new subvention for green energy decreases a specific amount of emissions of CO2. As outlined in **Subchapter 2.8.3**, such issue-specific information added to citizens' belief structure contain itself an inherent degree of persuasiveness (or argument strength) to have a specific attitude toward the attitude object. This persuasiveness is independent of the importance attributed to this belief. While someone attaches less importance to saving the environment, this person would probably agree that a subvention that substantially decreases CO2 is more compelling belief content to support the subvention than when the decrease is only marginal.

Thus, different beliefs should contribute differently strongly to an attitude in addition to the importance attached to these beliefs. This can be integrated in the formalized attitude equation by Fishbein and Ajzen (1975) as p_i. Then, this equation is $A = \sum v_i p_i w_i$, where A is the attitude as the sum of beliefs about the attitude object (v_i), p_i is the persuasiveness of these beliefs, and w_i is the importance attributed to these beliefs. Based on this equation, salience emphasis frames may now work via two different paths without adding any new beliefs to the equation or altering existing beliefs, i.e., without working via belief content change.

First, frames may alter how persuasive people judge a specific belief for a specific attitude direction. When the environment frame explicitly contextualizes a marginal decrease in CO2 through the new subvention as a first important step in saving the environment, this marginal decrease (i.e., the belief content induced by new thematic information) may become a more compelling reason to support the new subvention. That is, the frame could increase the argument strength of this issue-specific consideration. However, the content of the belief must not necessarily change through changes in its perceived persuasiveness. People can still be aware that the decrease in CO2 is only marginal, but evaluate this as a more compelling belief to support the subvention when framed as protecting the environment. Here, the frame can directly alter how specific information and beliefs are evaluated regarding its persuasiveness. This mechanism may be introduced into the literature as *belief evaluation change*.

Second, frames can alter the importance of beliefs connected with an underlying political value, i.e., work via belief importance change. In this case, beliefs remain unchanged, but the importance of the valuation standard suggested by the frame increases. The environmental frame, for example, can increase the importance citizens attribute to protecting the environment. However, people could still be aware that the reduction of CO2 is only marginal (belief content) and that the marginal reduction is not very compelling to support the new subvention (belief evaluation). Nevertheless, the frame could increase support for the subvention because it increases the importance of doing something for the environment, regardless of what and how effective this is. In contrast to belief evaluation change, belief importance change does not alter how new issue-specific information is evaluated (e.g., the argument strength of a marginal reduction of CO2), but increases the general importance of the valuation standard suggested by the frame in interpreting the issue, e.g., political values or superordinate policy goals (cf. Nelson, 2004).

Further explanation is needed of the newly introduced mechanism of belief evaluation change due to salience emphasis frames. This mechanism should be understood as an indicator for the biased processing and evaluation of thematic information, i.e., as a measure for motivated reasoning about the argument strength of new issue-specific information, rather than as belief importance change, which deals with the perception of the valuation standard suggested by the frame. As explained in **Subchapter 2.8.3**, increased motivated reasoning triggered by (value-resonant) frames or message incongruence between issue-specific argument strength and cross-thematic frames can lead to the

directional goal of evaluating information in accordance with a specific standard of reference (cf. Bolsen et al., 2014; Taber & Lodge, 2006) such as a political value mentioned by the frame. This can change how persuasive a specific piece of information is evaluated to be to maintain consistent interpretation of the message.

Furthermore, motivated reasoning about the argument strength of issue-specific information is not a simple heuristic process, but an effortful evaluation of information to achieve the directional goal of consistency (cf. Bolsen et al., 2014). In other words, the proposed mechanism of belief evaluation change does not work via simple changes in the accessibility of issue-specific information with certain argument strength. Rather, it implies a conscious deliberation of argument strength, but in a biased manner (for the biased systematic processing of argument strength, see also Chaiken & Maheswaran, 1994; Ziegler & Diehl, 2003).

After having introduced belief evaluation change as a further possible mediator of framing effects on issue attitude, **Figure 9** illustrates the different mediation processes of new thematic information with varying argument strength and of salience emphasis frames using for the last time the example of a government's plan to build a new commercial area in the countryside. As explained, new thematic information with specific argument strength for a specific issue attitude should independently influence citizens' issue attitude via changes in belief content, because it adds new beliefs to citizens' belief structure regarding the attitude object.

People exposed to the thematic information that building this project creates 100 new jobs (thematic information B) but displaces some venomous snakes (thematic information A –) add the belief content to their belief structure that the project has a weak negative influence on the environment. However, the thematic information that realizing the project would kill all wild bee colonies in the region (thematic information A+) adds the belief content that the project has a strong negative influence on the environment (belief content change).

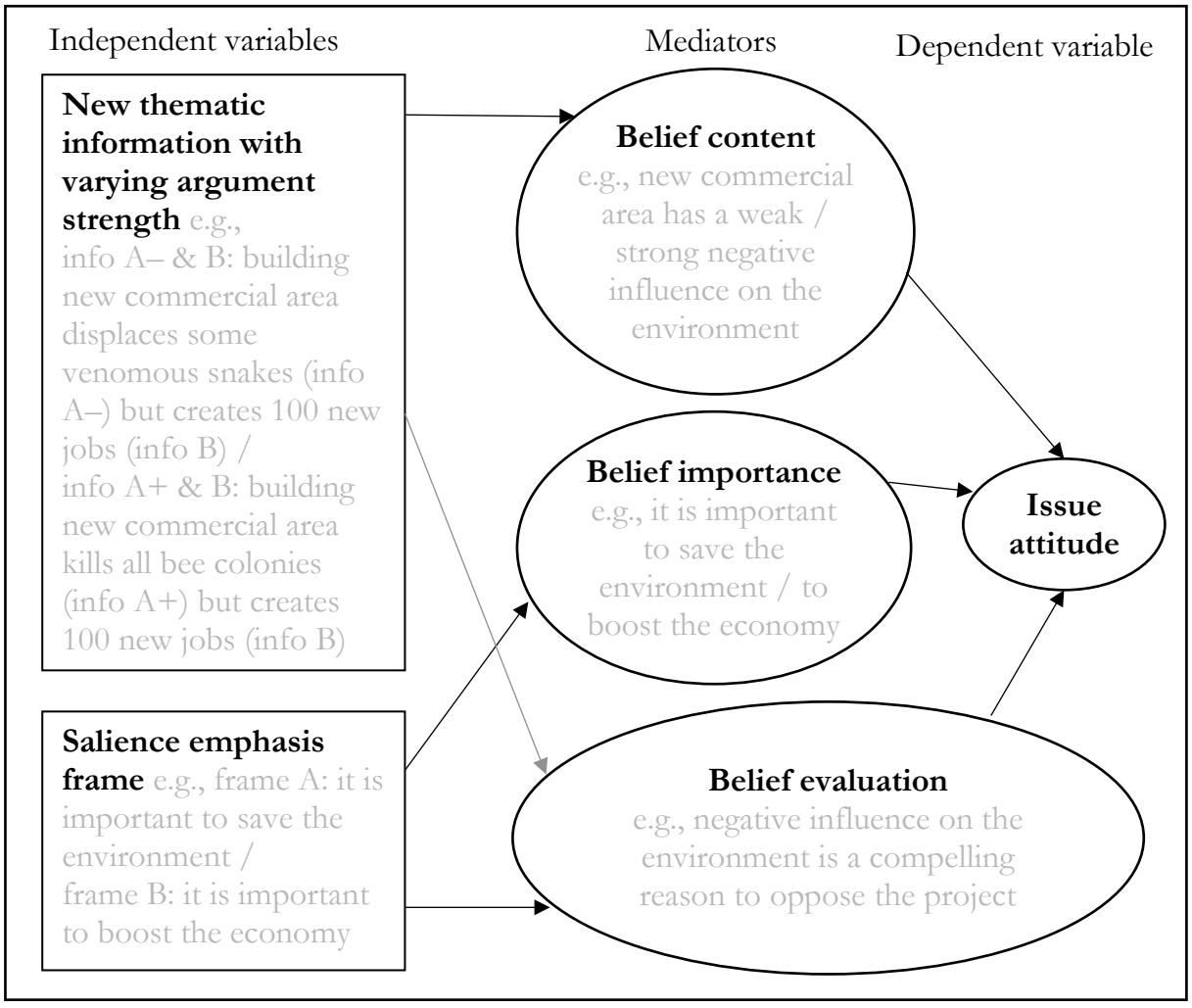
As this new thematic information contains specific argument strength, it should not only influence which issue-specific facts people know about the issue (i.e., belief content change), but also how compelling this information is judged in having a specific issue attitude (i.e., belief evaluation change due to new thematic information). Thus, people exposed to the thematic information that the project only displaces some venomous snakes would evaluate this information as a less compelling reason to oppose the project than people who receive the thematic information that all wild bees will die.

However, how compelling thematic information is evaluated would also be influenced by salience emphasis frames. Thus, when the environment frame contextualizes the thematic information and explicitly defines it as a relevant threat to the environment, people likely evaluate the weak negative influence on the environment in a more biased way and as more compelling information to oppose the new commercial area than when the economy frame contextualizes the thematic information (i.e., belief evaluation change due

to salience emphasis frame). This should happen without changing the belief content itself, i.e., people would still agree that the negative influence on the environment is weak.

In addition, the environmental frame would simultaneously increase the importance citizens give to saving the environment (belief importance change), because the frame not only defines the issue-specific information as a threat to the environment but also emphasizes that saving the environment is an important policy goal. Both increased belief importance and belief evaluation change then likely affect citizens' attitude toward the new commercial area.

Figure 9. Mediation of the effects of salience emphasis frames and of new thematic information with varying argument strength on issue attitude via belief content change, belief importance change, and belief evaluation change



With the introduction of belief evaluation change as a further mediator of salience emphasis framing effects, which captures how frames alter the persuasiveness of issue-specific information, the last relevant aspect of the differentiation between emphasis frames and thematic information has now been discussed as a response to the criticism of the

emphasis framing approach (see **Subchapter 2.8.1**). Before postulating testable hypotheses (see **Part III**) based on the response to this criticism presented in the last subchapters, the following **Subchapter 2.8.5** briefly summarizes the central aspects of this response.

2.8.5 Summary

This chapter addressed a fundamental concern regarding the empirical paradigm of researching emphasis framing effects in political communication: the confounding of frames with additional new thematic information when testing emphasis framing effects (see **Subchapter 2.8.1**). When experimental studies investigate the effects of emphasis frames, the frame conditions often not only vary in the salience of a specific frame (e.g., highlighting the importance of civil rights vs. security) but also provide different additional facts about an issue or event (e.g., a new law allows surveillance of all citizens without suspicion vs. it allows the surveillance of terrorists after a judge approves the measure on a case-by-case basis).

Critics such as Leeper and Slothuus (2017) and D. A. Scheufele and Iyengar (2017) argue that this confounding makes it impossible to distinguish between the unique effects of frames that according to the theory, should not provide new information but reorganize it, and of persuasive effects based on the supply of new information (Kinder, 2003). The consequences of this confounding are that framing effects are rarely investigated according to theoretical postulates (Leeper & Slothuus, 2017) and that mixing information-based persuasion and emphasis frames threatens the uniqueness of the framing approach and transforms it into a catch-all phrase indistinguishable from other types of communicative messages, threatening its individual explanatory power (Cacciatore et al., 2016).

Besides this theoretical problem, the confounding has important implications for assessing how susceptible citizens are to emphasis framing effects and how rational citizens form an attitude based on substantive thematic facts and information (Leeper & Slothuus, 2017). Possibly, only the varying thematic information led to attitudinal effects in former studies, not the emphasis frames themselves. Thus, the effectiveness of frames as described in the literature (for an overview, see **Chapter 2.7**) may be exaggerated. Moreover, this implies that citizens form their attitudes rationally based on the different issue-specific facts, not based on simple shifts of the salience of a specific frame, which would otherwise suggest a less rational attitude formation.

Based on this criticism, this book asks the question of how susceptible citizens are to unique emphasis framing effects not confounded with new thematic information. Addressing this question enables a better assessment of how rationally citizens' attitude formation takes place. As a first theoretical response to the criticism of emphasis framing effects, **Subchapter 2.8.2** introduced the concept of salience emphasis frames as an externally valid type of frame not confounded with new thematic information. In contrast, salience emphasis frames use known and cross-thematic concepts of interpretation such as basic political values to contextualize new thematic information – without adding any new

issue-specific information or altering existing thematic information. This conception enables testing the unique effect of emphasis frames when thematic information is constant across different frame conditions.

However, the differentiation between salience emphasis frames and thematic information allows further possibilities to better assess the influence of salience emphasis frames on citizens' political attitude formation. Specifically, how the same cross-thematic salience emphasis frame affects attitudes when the issue-specific informational setting varies in a controlled setting can be tested (see **Subchapter 2.8.3**). Thematic information can contain in itself a specific argument strength (or persuasiveness) for a specific attitude direction (cf. Leeper & Slothuus, 2017). Without additional framing, the thematic information that a new law allows surveilling all citizens without suspicion will likely lead to stronger opposition against this law than when the thematic information is that the new law only allows the government to surveil individual persons after a judge has decided there is sufficient suspicion that this person plans a criminal act.

By separating issue-specific argument strength from cross-thematic frames, one can test whether the same frame is only effective when contextualizing thematic information with high argument strength for the position of the frame or also when argument strength of the issue-specific information is weak for this position. The latter would be a stronger indicator for the effectiveness of frames, as it would imply they are effective despite the absence of thematic facts that strongly support the contextualization of the frame.

Moreover, disentangling salience emphasis frames and thematic information with varying argument strength enables testing whether such frames –when value-resonant – can suppress the effects of argument strength on issue attitude. That is, whether citizens simply follow "their" frame (i.e., the frame that employs a political value to contextualize the information preferred by a person) in the same way regardless of the argument strength of thematic information on which these attitudes are based when thematic information is not explicitly contextualized with their value-resonant frame. This result would be the strongest indicator for more biased and thus less rational processing of the argument strength of thematic information (i.e., of basic issue-specific facts) due to explicit value-resonant framing.

Besides these possibilities to better assess when and how strongly salience emphasis frames influence attitudes, the differentiation between thematic information and frames also helps in understanding the equivocal results regarding the mediating psychological mechanisms responsible for framing effects (see **Subchapter 2.8.4**). Most studies focused on whether changes in belief content (i.e., a person's beliefs about an attitude object) or in belief importance (i.e., higher importance of the valuation standard suggested by the frame, e.g., the environment or economy) mediate framing effects revealed that both mechanisms are effective (Lecheler et al., 2009; Lecheler & de Vreese, 2012; Nelson & Oxley, 1999; Slothuus, 2008), although basic framing theory suggests that emphasis frames only work via belief importance (Nelson, Oxley et al., 1997).

The reason for these contradictory findings could be that confounded frames containing new thematic information led to changes in belief content because the frames provided new information citizens could add to their belief structure regarding the framed issue or event. In contrast, the proposed conception of salience emphasis frames that are not confounded and do not contain any additional new issue-specific information enables testing more precisely the classic theory that emphasis frames only work via belief importance changes, not via changes in belief content.

However, belief importance may not be the only mediator that explains the effects of salience emphasis frames. Such frames may also directly affect citizens' evaluation of the argument strength of new thematic information. To capture this biased processing of the persuasiveness of new thematic information, **Subchapter 2.8.4** introduced the concept of belief evaluation change as a possible further mediator of salience emphasis framing effects in addition to changes in belief importance.

In sum, this chapter responded to the criticism of confounded framing effects in previous studies and provided an adjusted theoretical approach allowing a more precise test of the unique effects of non-confounded salience emphasis frames compared to the effects of new thematic information. This can better answer the question of how susceptible citizens are to framing effects and the rationality of their attitude formation under framing conditions. Based on this adjusted theoretical approach to emphasis framing effects, the next part derives concrete and testable hypotheses (see **Part III**) before describing the method employed to challenge these hypotheses (see **Part IV**) and presenting empirical results on the existence of salience emphasis framing effects (see **Part V**).

III HYPOTHESES AND RESEARCH QUESTIONS

As a response to the recent criticism on the empirical paradigm of researching emphasis framing effects (e.g., Leeper & Slothuus, 2017; D. A. Scheufele & Iyengar, 2017), the previous chapter proposed salience emphasis frames as a frame conception not confounded with new thematic information (see **Chapter 2.8**). This conception is expected to more precisely test the unique effects of frames on citizens' attitude formation and thus better answer the question of how rational citizens form their political attitudes under framing conditions. Thus, the superordinate research question of this study is whether empirical support exists for the existence of salience emphasis framing effects and how strong these effects are.

> **Superordinate research question:** How susceptible are citizens to salience emphasis framing effects and how rational is their attitude formation under framing conditions?

Based on the theoretical discussion in the theory section, this superordinate research question can be delineated into a series of specific hypotheses and research questions that test the effects of salience emphasis frames on issue attitude step-by-step in increasing detail (also see Kaiser, 2019a for a short summary of some of these hypotheses and research questions). This enables determining how persistent such framing effects are when situations become increasingly challenging for their occurrence. However, the first hypothesis, H1, is not concerned with the effects of frames, but with the effects of thematic information with varying argument strength for a specific issue attitude. As discussed in **Subchapter 2.8.3**, new thematic information about an issue or event contains itself a specific degree of persuasiveness to adopt a specific attitude. To better understand, how frames influence attitudes when considering different informational settings, it is thus important to first explore the influence of the argument strength of issue-specific information.

In addition, this enables a later comparison of the effects of frames with the effects of new thematic information (for a comparable approach, see Leeper & Slothuus, 2017). Given the long tradition of research on persuasion based on the supply of new issue-specific information with varying argument strength, it is expected that argument strength exerts an independent main effect on issue attitude across all conditions (i.e., when aggregating situations with and without salience emphasis framing). Strong arguments are perceived as more appropriate in evaluating a certain issue because they provoke more positive thoughts and less counter-arguing than weak arguments (Petty & Cacioppo, 1986). Numerous persuasion studies have shown that citizens form their attitudes based on the

strength of presented arguments (e.g., Park et al., 2007), even more so when arguments are processed carefully as proposed by the elaboration likelihood model (for a meta-analysis, see Carpenter, 2015).

Thus, aligned with the findings of Leeper and Slothuus (2017), who questioned the effects of emphasis frames and mainly found support for the effects of issue-specific information, hypothesis H1 predicts that citizens' issue attitude will be influenced by the strength of the argument contained in new information about an issue or event.

> **Hypothesis 1 (H1):** New thematic information containing high argument strength for a specific issue position moves citizens' issue attitude in the direction of this issue position in comparison to thematic information containing low argument strength for this position. (*main effect of issue-specific argument strength*)

However, citizens' attitude formation should not only be influenced by the argument strength of new thematic information, but also by salience emphasis frames that contextualize this information with known cross-thematic patterns of interpretation such as political values, but without adding any further issue-specific information. As noted in **Chapter 2.5**, value emphasis frames activate pre-existing, available, accessible, and applicable considerations (Chong & Druckman, 2007c) that are deeply rooted in society and have cultural resonance (Entman, 1993). This should influence the importance citizens attribute to the political value mentioned by the frame when they interpret new thematic information (Nelson, 2004; Nelson, Oxley et al., 1997).

As **Subchapter 2.5.2** and **Subchapter 2.5.3** outlined, numerous studies have shown that value emphasis frames can finally affect issue attitudes, especially in one-sided situations in which citizens are exposed to only one frame (e.g., Beattie & Milojevich, 2017; Chong & Druckman, 2007a; Shen & Edwards, 2005). This effect of one-sided framing conditions should also occur when salience emphasis frames employ political values to explain the thematic information, even though such frames do not add further thematic information. Salience emphasis frames explicitly explain why thematic information should be interpreted in light of a specific political value and thereby, what attitude is appropriate given the thematic information (see **Subchapter 2.8.2**). As political values are well-known by citizens and are generally highly applicable to various issues, citizens' issue attitude should follow the direction suggested by the frame.

The differentiation between issue-specific information and salience emphasis frames allows testing this proposed effect twice for the same salience frame. First, a salience emphasis frame contextualizing new thematic information likely influences issue attitudes in comparison to presenting only new thematic information without explicit framing (see hypothesis H2). Second, a salience emphasis frame should be effective compared to situations in which a different salience emphasis counter-frame with the opposite valence contextualizes the thematic information and suggests the opposite attitude direction (see hypothesis H3). That is, both hypotheses expect an independent main effect of the same

salience emphasis frame compared to different situations, but without considering the varying argument strength of the thematic information the frame contextualizes, i.e., aggregated over both argument strengths (for a graphic representation of these hypotheses, see the two effect arrows for H2 and H3 in **Figure 10**).

> **Hypothesis 2 (H2):** A salience emphasis frame moves citizens' issue attitude in the direction of the issue position of the frame in comparison to situations with only new thematic information without explicit framing. (*main effect salience emphasis frame compared to no frame*)

> **Hypothesis 3 (H3):** A salience emphasis frame moves citizens' issue attitude in the direction of the issue position of the frame in comparison to situations with an opposite counter-frame. (*main effect salience emphasis frame compared to counter-frame*)

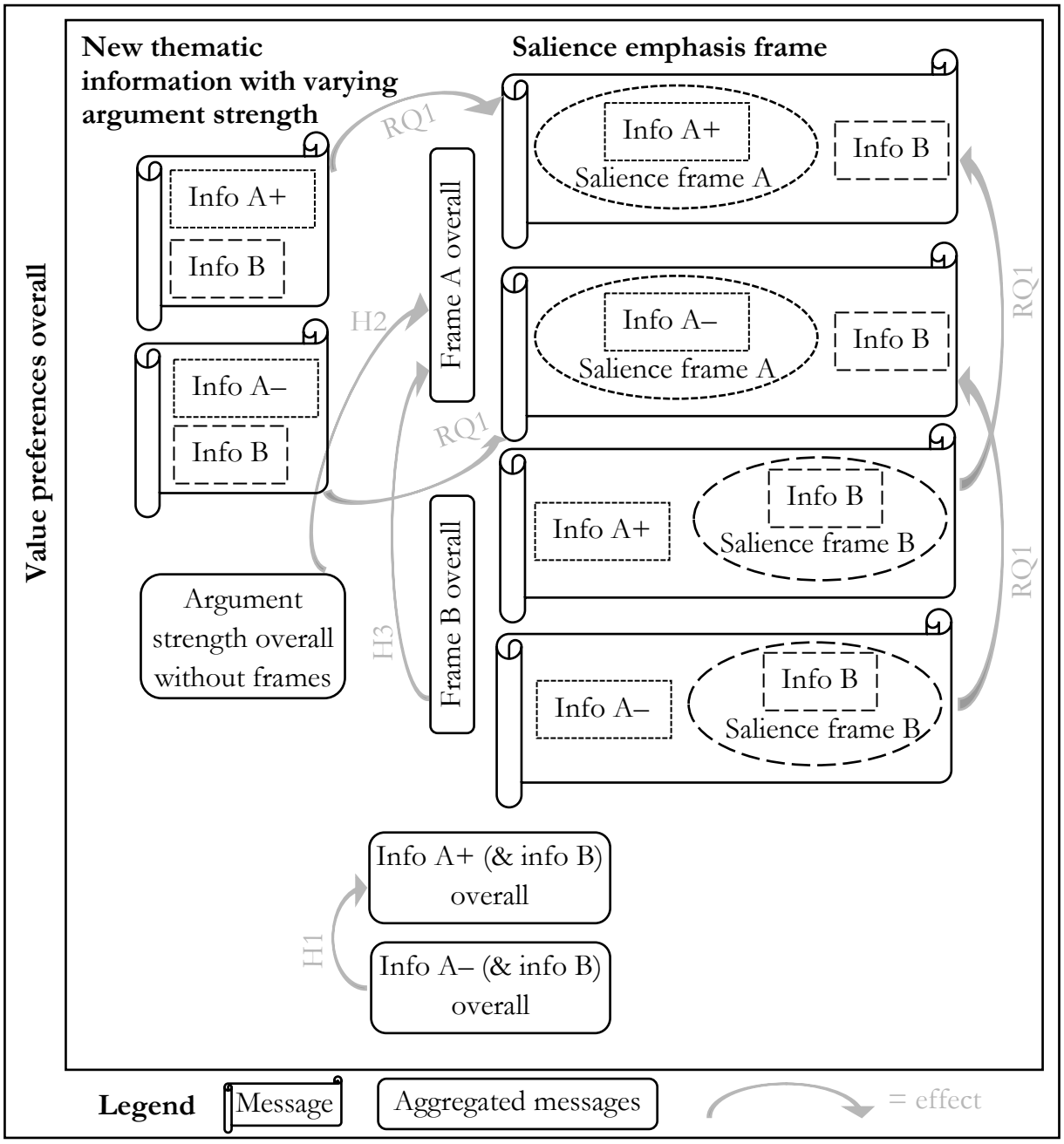
However, the proposed main effects of salience emphasis frames can be delineated by the different argument strength of the issue-specific information the frame contextualizes. This enables determining how effective the same frame is when the informational setting varies. Specifically, one can test whether a salience emphasis frame only influences issue attitude when it contextualizes thematic information containing high argument strength for the issue position suggested by the frame or also when issue-specific argument strength is low for the issue position of the frame, i.e., when the substantive thematic information is against the direction of the frame (see **Subchapter 2.8.3**).

If salience emphasis frames also affect issue attitudes in the latter case, then this is an even stronger indicator for citizens' susceptibility to framing effects. It would mean that frames are effective when contextualizing a weak issue-specific argument for the attitude direction suggested by the frame, in other words, when there is no compelling thematic information to follow the suggested frame interpretation.

Again, this question can be examined twice. First, one can test whether a frame likewise affects issue attitude when contextualizing strong and weak issue-specific arguments for its issue position in comparison to situations without frames. Second, one can test whether this occurs for both issue-specific argument strengths in comparison to situations in which a counter-frame contextualizes the thematic information (see the four effect arrows in **Figure 10** concerned with research question RQ1). However, research question RQ1 addresses more broadly the independence of the salience emphasis framing effects from the issue-specific argument strength the frame contextualizes:

> **Research question 1 (RQ1):** Does a salience emphasis frame move citizens' issue attitude in the direction of the issue position of the frame only when the thematic information contains high argument strength for the issue position of the frame or also when the thematic information contains weak argument strength for this issue position? *(independence of frame effect from argument strength of thematic information*)

Figure 10. Schematic illustration of H1 to H3 and of RQ1



The hypotheses and research questions proposed thus far only considered the variables of argument strength of thematic information and salience emphasis frames and expected effects on citizens on aggregate. However, as discussed in **Subchapter 2.4.1**, an ongoing question in research on framing effects is whether framing effects work uniformly for different citizens or are moderated by citizens' political-psychological characteristics (Borah, 2011a). As salience emphasis frames employ political values to contextualize new thematic information, and are thus a specific type of value frame, an important moderator to consider is citizens' political value preference (A. C. Andrews et al., 2017; Schemer et al., 2012; Shen & Edwards, 2005).

Chapter 2.5 defined core political values such as egalitarianism, civil rights, and safety as stable, abstract, and superordinate conceptions of desirable or undesirable goals concerned with humanity, society, and public affairs (Goren, 2001, 2005; Jacoby, 2006). Citizens adhere to such values to varying degrees and hold a hierarchical order of values, meaning they have specific political value preferences (Jacoby, 2006). When forming attitudes about concrete political events, candidates, policies, or issues, citizens rely on their political value preferences, which allow them to evaluate these aspects under the umbrella of their core beliefs (Ciuk et al., 2017; Feldman, 1988; Jacoby, 2006). Thus, hypothesis H4 first postulates a general and independent main effect of citizens' value preference on issue attitudes aggregated over frame conditions and issue-specific argument strength.

> **Hypothesis 4 (H4):** Citizens differ in their issue attitudes according to their political value preference. (*main effect political value preference*)

However, value preferences not only directly affect the interpretation of issues, but they also influence how value emphasis frames in political messages are interpreted, suggesting they can moderate the effects of frames (see **Subchapter 2.5.3**). If citizens hold values congruent with the frame – i.e., when the media frame is value-resonant – framing effects tend to be significantly stronger (A. C. Andrews et al., 2017; Schemer et al., 2012; Shen & Edwards, 2005). If frames are value-resonant, they rely on considerations chronically accessible to the receiver, and therefore, a value-resonant media frame can activate these existing cognitions more easily. This increases the likelihood that the frame will be used for attitude formation compared to a non-resonant frame, which tries to activate considerations that are less chronically accessible (Schemer et al., 2012; Shen & Edwards, 2005). In addition, receivers judge the applicability of a frame based on their political value preferences. If the frame is value-resonant, it is perceived as being aligned with the person's values and judged as more appropriate in evaluating the topic. This increases the likelihood that the attitude will follow this frame compared to a non-resonant frame (A. C. Andrews et al., 2017).

Nevertheless, this does not mean that salience emphasis frames working with political values only have effects when they match citizens' preexisting value preferences. Such frames build on political core beliefs such as humanitarianism or safety, which are not easily declinable even if they are not at the top of an individual's value hierarchy. Such values are well-known and in the stock of cultural frames (Entman, 1993). Thus, value frames use available and applicable considerations that fulfill an important precondition for the effectiveness of frames (Chong & Druckman, 2007c), even for citizens for whom the mentioned value is not the most important. Nobody can seriously state that the value of security is completely unimportant and meaningless, especially when achieving security does not restrict other political values. **Subchapter 2.5.3** highlighted that some studies have confirmed the effects of value frames even for citizens with competing values, in particular

when frames are one-sided (Beattie & Milojevich, 2017), strong (Chong & Druckman, 2007a), or presented in a non-polarized environment (Druckman et al., 2013).

That is, value framing effects moderated by political value preferences do not necessarily imply that salience emphasis frames are only effective when the value employed by the frame matches citizens' value preference. Likewise, the moderation can imply an effect of non-resonant value frames, although the frame effect is significantly stronger when the frame is value-resonant. Thus, research question RQ2 asks whether a salience emphasis frame employing a political value to contextualize new thematic information only is effective when this frame is value-resonant or also when it is non-resonant.

Regarding the question of citizens' rationality when forming attitudes, the latter effect would be more problematic, as it implies that salience emphasis frames can even influence attitudes when the employed value of this frame is not aligned with citizens' preferences (see **Subchapter 2.5.4**). Again, the effects of value-resonant and non-resonant frames addressed in research question RQ2 can be analyzed twice, once compared to situations without frames and once compared to an opposite counter-frame (see the four effect arrows in **Figure 11** concerned with RQ2). However, for a more straightforward formulation, research question RQ2 is simplified as follows:

> **Research question 2 (RQ2):** Does a salience emphasis frame move citizens' issue attitude in the direction of the issue position of the frame only when the frame is resonant with citizens' value preference or also when the frame is non-resonant? (*effect of salience emphasis frame for different political value preferences*)

Even if salience emphasis frames affect citizens with different value preferences, value resonance between the frame and citizens' preferences should play a decisive role when examining the effects of issue-specific argument strength under framing conditions. When only new thematic information and no explicit frames are present, namely when issue-specific argument strength is presented in isolation, citizens' degree of motivated reasoning – i.e., processing the strength of arguments in a biased way along individual preferences (Bolsen et al., 2014; Taber & Lodge, 2006) – should be rather low, because no external factors trigger the motivation for achieving directional goals, such as the reinforcement of existing opinions or defense of one's own identity when processing information (see **Subchapter 2.8.3**).

In such situations, people should tend to follow the strong rather than the weak issue-specific argument when forming their attitude, and their individual preferences play only a minor role (Druckman et al., 2013). Therefore, the first part of hypothesis H5 proposes that issue-specific argument strength influences citizens' issue attitude regardless of their value preferences when only new thematic information and no explicit frames are offered (in **Figure 11**, see on the left the two proposed effect arrows for H5 for high and low preference for a specific political value when comparing the effect of argument strength when no frames are present).

However, external factors can increase the degree of motivated reasoning about issue-specific argument strength when these factors make one's own identity more salient in the evaluation of argument strength. If, for example, explicit party endorsements accompany the arguments and participants are told that parties are polarized about the issue, then people tend to follow the argument of their preferred party, regardless of whether the party presents a strong or weak argument (Druckman et al., 2013). The same mechanism should apply to value-resonant frames, because these frames also increase the salience of one's political identity by explicitly contextualizing the argument strength of thematic information with a preferred political value. This should then increase motivated reasoning about argument strength.

This likely alters the effect of issue-specific argument strength, and people no longer follow the stronger argument to form their issue attitude as they would do when no additional frames contextualize the thematic information. In contrast, they should follow "their" value-frame in the same manner, regardless of whether this frame contextualizes only a weak or a strong issue-specific argument for an issue attitude in the direction of the preferred frame (see **Subchapter 2.8.3**). As such, a value-resonant frame should suppress the effect of issue-specific argument strength (see the black arcs for H5 in **Figure 11** indicating no effects of argument strength when the frame is value-resonant). Thus, hypothesis H5 formally states:

> **Hypothesis 5 (H5):** Compared to situations without frames in which citizens move their issue attitude more in the direction of the strong argument than of the weak argument contained in thematic information, the argument strength of issue-specific information loses its effectiveness when the salience emphasis frame is value-resonant. Then, citizens move their issue attitude in the direction of their frame regardless of argument strength. (*suppression of the effect of issue-specific argument strength through value-resonant frame compared to no frame*)

Whereas a value-resonant salience emphasis frame likely suppresses the attitudinal effects of issue-specific argument strength, a different pattern of the argument effect should emerge when a non-resonant frame contextualizes thematic information with varying argument strength against the issue attitude suggested by this non-resonant frame. In this case, the effect of argument strength should persist, because the incongruence between high argument strength for an issue-attitude aligned with one's values and a non-resonant counter-frame in the message should increase motivated reasoning and thereby, counter-arguing against the non-resonant emphasis frame. This will likely increase the effectiveness of the strong issue-specific argument against the non-resonant frame.

In contrast, motivated reasoning should be less pronounced when argument strength is weak for an attitude opposite to the one suggested by the non-resonant frame, because this congruence in the message inhibits cognitive conflict that could activate motivated reasoning and thereby inhibit a more biased processing of the weak issue-specific

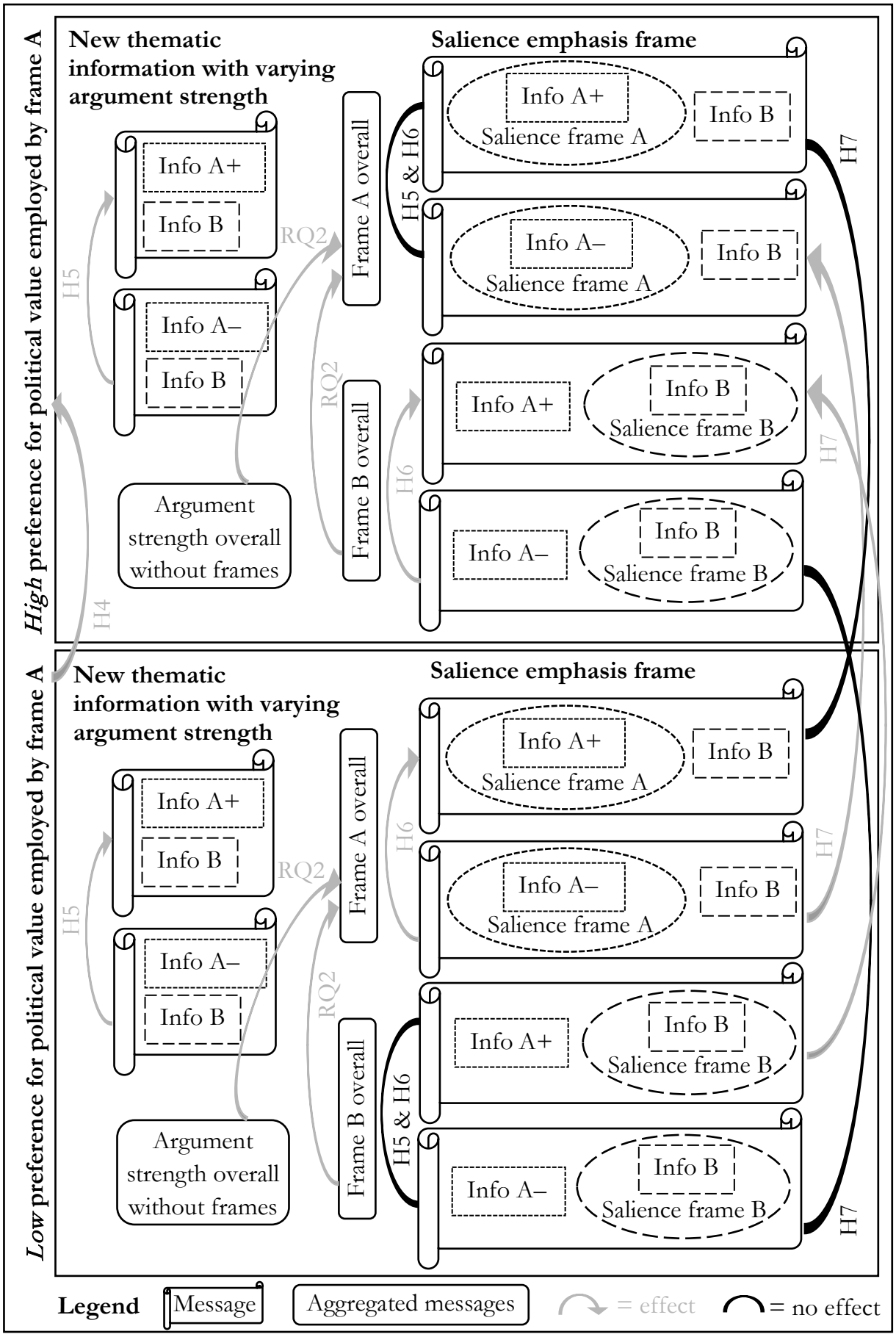
argument (for a longer discussion, see **Subchapter 2.8.3**). Thus, the effect between a strong and a weak issue-specific argument for an issue attitude aligned with one's values should persist when framed with a non-resonant counter-frame (see the effect arrows for hypothesis H6 in **Figure 11**).

In addition, the persistence of the effect of thematic argument strength when contextualized with a non-resonant frame would ensure that the suppression of the effect of argument strength through value-resonant framing is not the simple result of distracting people from issue-specific arguments by adding any frame. A persisting effect of issue-specific argument strength in non-resonant framing situations implies that suppressing this effect in value-resonant framing situations is the actual result of motivated reasoning and a systematic biased evaluation of the issue-specific argument strength elicited by a value-resonant frame (see **Subchapter 2.8.4**). If in one case, a (value-resonant) frame suppresses the effects of argument strength and in another case, a (non-resonant) frame does not suppress this effect, the suppression cannot be the effect of simple distraction from the issue-specific arguments by adding a frame. Rather, it must be the result of motivated reasoning triggered by a value-resonant frame. Thus, hypothesis H6 expects:

> **Hypothesis 6 (H6):** Compared to situations with a non-resonant counter-frame in which citizens move their issue attitude more in the direction of the strong issue-specific argument than of the weak argument, the argument strength in the thematic information loses its effectiveness when the salience emphasis frame is value-resonant. Citizens then move their issue attitude in the direction of their frame regardless of argument strength. (*suppression of the effect of issue-specific argument strength through value-resonant frame compared to counter-frame*)

If H5 and H6 are empirically supported, they would be the strongest indicators for citizens' susceptibility to framing effects, indicating that frames could increase motivated reasoning so strongly that citizens blindly follow their frame and ignore the strength of the issue-specific argument for the attitude suggested by their frame. However, the explanation for H6 already noted that in some situations, salience emphasis frames may not lead to increased motivated reasoning and an evaluation of issue-specific arguments in light of individual political value preferences. Especially, this should be the case in situations in which salience emphasis frames and issue-specific argument strength point in the same direction, i.e., when messages are congruent (see **Subchapter 2.8.3**). This deserves more attention and a more general hypothesis H7.

Figure 11. Schematic illustration of H4 to H7 and of RQ2



When different message features consistently support a specific attitude direction in a compelling manner (e.g., a strong issue-specific argument for a specific attitude and a frame suggesting the same attitude), the persuasive strength of congruent messages should inhibit counter-arguing and the activation of individual preferences in interpreting the message, regardless of whether the frame is value-resonant or not. This should lead to less biased information processing aligned with individual preferences (Ziegler & Diehl, 2003), and citizens' political value preference should not substantially affect issue attitudes (see the black arcs for H7 in **Figure 11** indicating no effects of citizens' value preference when messages are congruent).

In contrast, if messages are incongruent, they are conflictive and do not clearly support a specific attitude (e.g., the frame suggests the importance of a weak issue-specific argument despite the existence of compelling counter-arguments in the message). To resolve this cognitive conflict, citizens likely employ their political value preferences as a helpful tool in interpreting the message meaningfully and they should engage in motivated reasoning along their preferences (see **Subchapter 2.8.3**). As a result, attitudes should become more polarized between citizens with different political values because of the incongruence between issue-specific argument strength and salience emphasis frames (see the effect arrows for H7 on the right side in **Figure 11**). Hence, hypothesis H7 proposes:

> **Hypothesis 7 (H7):** There is no substantial effect of citizens' political value preferences on issue attitude when the direction of a salience emphasis frame is congruent with the direction of the argument strength of thematic information. In contrast, there is an effect of value preference when the issue-specific argument strength is incongruent with the salience emphasis frame. (*varying influence of political value preference by message congruence*)

Thus far, the hypotheses and research questions have addressed the direct main and interaction effects of the three variables of issue-specific argument strength, salience emphasis frames, and political value preferences on citizens' issue attitude. The next hypotheses "zoom" into the main effects of the argument strength of thematic information and of salience emphasis frames to investigate the psychological mediation processes responsible for these effects. In the literature, the theoretical assumption is that the effects of frames on issue attitude are mediated via changes in the importance of values suggested by the frame in interpreting an issue (belief importance change), but not via changing beliefs about the attitude object (Leeper & Slothuus, 2017; Nelson, Oxley et al., 1997). However, previous studies on the mediation of framing effects reviewed in **Chapter 2.3** found that framing effects often work via both paths (e.g., Lecheler et al., 2009; Lecheler & de Vreese, 2012; Nelson & Oxley, 1999).

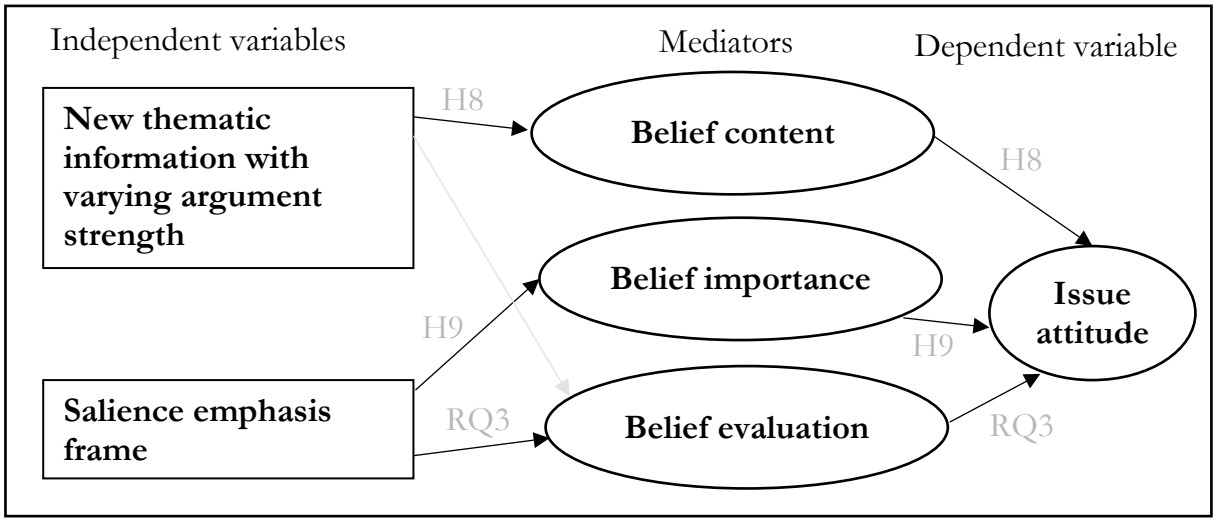
As mentioned in **Subchapter 2.8.4**, the reason for these unexpected results could be that the studies confounded emphasis frames with new thematic information in their stimuli. This means it could be that the frame did not change beliefs about the issue; rather,

the new thematic information did. By differentiating new thematic information with varying argument strength and salience emphasis frames, and treating both aspects as separate independent variables, the classic theory that the mediation of framing effects only works via belief importance change without changing beliefs about the issue can be tested more precisely. In contrast, exposure to new thematic information should influence issue attitudes only via belief content changes without also changing the importance of a specific valuation standard (i.e., without belief importance change, also see **Figure 12** for a graphical representation of hypothesis H8 and hypothesis H9). Thus, H8 and H9 postulate:

> **Hypothesis 8 (H8):** The effect of argument strength of new thematic information on citizens' issue attitude is mediated via changes in the belief content about the issue, but not via changes in the belief importance of a specific valuation standard. (*effect of issue-specific argument via belief content change*)

> **Hypothesis 9 (H9):** The effect of a salience emphasis frame on citizens' issue attitude is mediated via changes in the belief importance of the political value emphasized by the frame as valuation standard, but not via changes in the belief content about the issue. (*effect of salience emphasis frame via belief importance change*)

Figure 12. Schematic illustration of H8 and H9 and of RQ3



However, **Subchapter 2.8.4** not only proposed disentangling the variables of thematic information and salience emphasis frames to analyze more precisely the mediation process of framing effects. It also introduced a further mediator that could be responsible for the effects of salience emphasis frames on issue attitudes, namely belief evaluation change. This mechanism captures how compelling (or persuasive) citizens evaluate the argument strength of new thematic information to be to have a specific issue attitude without changing the content of beliefs. As issue-specific argument strength is an inherent

aspect of thematic information (see **Subchapter 2.8.3**), the persuasiveness of beliefs should be, of course, influenced by the thematic information citizens receive about an issue (see grey path in **Figure 12**).

However, salience emphasis frames may also affect the evaluation of the persuasiveness of issue-specific arguments (i.e., belief evaluation change). This is because such frames explicitly explain how to interpret thematic information and thus, could lead to more biased processing of issue-specific information and its persuasiveness, not only increase the importance of a specific valuation standard (i.e., besides belief importance change). Thus, the last research question RQ3 asks whether this newly introduced mediator can explain the effects of salience emphasis frames on issue attitude (see mediation paths for RQ3 in **Figure 12**):

> **Research question 3 (RQ3):** Is the effect of a salience emphasis frame on citizens' issue attitude mediated via changes in the evaluation of the persuasiveness of beliefs about the issue? (*effect of salience emphasis frame via belief evaluation change*)

Taken together, testing the proposed hypotheses and research questions will contribute toward comprehensively answering the superordinate research question of how susceptible citizens are to form their issue attitudes based on unique framing effects and why such possible effects occur. The next part of this book explains the methodological approach employed to challenge the occurrence of salience emphasis framing effects (see **Part IV**). Thereafter, **Part V** provides the empirical results for the hypotheses and research questions.

IV METHOD

4.1 Structure of the methods section

The quality and generalizability of empirical scientific results depend on how they were generated. The aim of this methods section is to substantiate the methodological approach of this study in a detailed way and to explain and reflect intensively on the decisions made to obtain the database for the results.

Many reasons (e.g., questionable research practices, see Matthes et al., 2015) underlie the current replication crisis in social sciences in general and in psychological science in particular (Open Science Collaboration, 2015). However, one important problem is that researchers do not always provide enough methodological information (LeBel, McCarthy, Earp, Elson, & Vanpaemel, 2018). This is often the result of limited space in scientific journals and not necessarily of questionable research practices. Still, the lack of information makes exact replications difficult and conceptual replications that differ from the original experiment have the disadvantage that they are hardly comparable with the original study (LeBel et al., 2018).

Thus, an important aspect of overcoming the replication crisis is transparency regarding the methods and data of a study (LeBel et al., 2018). This ensures the provision of sufficient information for exact replications and enables other researchers to evaluate the methodological quality of the study and therewith, its general relevance in providing credible scientific results. Therefore, this methods chapter is relatively exhaustive and covers all methodological aspects of this study in detail in the following subchapters.

After this introduction, a brief epistemological rationale is provided for why this study employed an experimental approach to test the hypotheses and research questions (**Subchapter 4.2.1**). Next, the conceptual experimental design of the study is introduced and the appropriateness of the chosen factorial structure of the experiment in challenging the hypotheses credibly and strongly is substantiated (**Subchapter 4.2.2**). The following **Subchapter 4.2.3** justifies the selection of the political issue for the experiment and presents its (dis-)advantages in terms of generalizing the results to other political topics. Subsequently, the operationalization of the experimental manipulations is explained and stimuli are displayed (**Subchapter 4.2.4**).

Thereafter, **Subchapter 4.3.1** provides an overview of the quasi-representative interlocked quota sample of citizens who participated in the experiment, and it contrasts the basic demographic sample statistics with the population of German-speaking Switzerland to evaluate the generalizability of the results beyond the sample. A discussion on all political-psychological measures follows (**Subchapter 4.3.2**). Thereafter, the choice of conducting the experiment online, the procedure of the experiment, the order of the questions, and the data cleansing criteria are introduced and their potential implications for the internal validity are discussed (**Subchapter 4.3.3**). Next, **Subchapter 4.3.4** provides

the results of a simultaneous confirmatory factor analysis to evaluate how well the measures captured the underlying political-psychological concepts, followed by an overview of the descriptive statistics to better understand the sample (**Subchapter 4.3.5**).

Following this, formal tests are described of the internal validity of the experiment to secure the important theoretical advantage of the relatively high internal validity of experiments has translated into the specific design of this study in terms of successful randomization (**Subchapter 4.4.1**). **Subchapter 4.4.2** then examines whether the participants recognized the manipulations in the experimental stimuli and perceived them as intended. However, it is not sufficient that participants perceive the manipulations as intended. It must also be ensured that the manipulation of issue-specific argument strength yielded different baseline attitudes. This is tested in **Subchapter 4.4.3**. Even if this study fulfilled all these requirements for internal validity, the interpretation of the results could still be misleading because of problems in statistical power. Therefore, the subsequent chapter describes the results of a power analysis (**Subchapter 4.4.4**).

The last chapter summarizes the method used in this study (**Chapter 4.5**). This subchapter provides enough detail to understand the results without delving into previous in-depth subchapters of the methods section, and it is comparable to the methods sections in scientific journals with limited space. Beyond the methodological information presented here, the supplementary online material available via https://doi.org/10.23662/FORS-DS-1013-1 provides additional resources such as the original questionnaire in German including all experimental stimuli, the raw dataset of the study, the statistical power analysis, and the entire R-script documenting the preparation of the data and the statistical analyses (see Kaiser, 2019b).

4.2 Experimental approach

4.2.1 Choice of method

Adhering to the scientific paradigm of critical rationalism introduced by Karl Popper (1934/2002), the goal of this study was to try to falsify the postulated hypotheses (see **Part III**) through strong methodology and credible empirical data. The first aspect of a strong methodological approach is selecting an appropriate research design that enables accurately testing the hypotheses. Thus, before selecting a specific method from the toolbox of the empirical social sciences, the type of hypotheses postulated should be considered, as this implies which methodological approaches can serve as a strong attempt of falsification.

The proposed hypotheses and research questions have in common that they expect or ask for effects of a certain cause (i.e., communication of issue-specific argument strength and salience emphasis frames) on a specific outcome (e.g., on individual issue attitudes). As such, this study postulates causal hypotheses and research questions on communication effects.

A causal relation between two variables is defined with three criteria (cf. Shadish, Cook, & Campbell, 2002, pp. 3–12):

(1) *Relation*: There should be a relation between the two variables in the sense of that changes in one variable go along with changes in the other variable.
(2) *Chronology*: The cause variable needs to precede the effect variable.
(3) *Exclusiveness*: There should be no plausible competing explanations for the occurrence of the effect other than the cause.

To challenge causal hypotheses appropriately, the experimental approach offers many advantages compared to correlational studies, because it not only enables measuring a relation between two variables but it can also potentially fulfill the two other preconditions of testing a causal relation: the occurrence of the cause before the occurrence of the effect and the elimination of competing causes for the effect (cf. Shadish et al., 2002, pp. 3–12). The experimental approach enables this through four basic elements (cf. Gravetter & Forzano, 2018, pp. 157–183):

(1) *Manipulation*: The researcher can manipulate the causing independent variable by changing its value to obtain at least two treatment conditions.
(2) *Measurement*: The influenced dependent variable can be measured.
(3) *Comparison*: The scores of the dependent variable can be compared between treatment conditions. Differences between these conditions indicate that the causing manipulated independent variable is responsible for these differences.
(4) *Control*: All other variables that could (co-)influence the causal relation are controlled.

By exclusively manipulating the cause between experimental groups while holding constant between the groups any other known and unknown variable, differences in the outcome variable between the groups can exclusively be induced by the only other variable that varies between groups, and this is the manipulated independent variable. To ensure that other variables do not systematically co-vary with the manipulated variable, two principles are fundamental. First, when manipulating the independent variable of interest, it is necessary that another (confounding) variable is not unintentionally manipulated with the independent variable. Second, by randomly assigning the subjects to the experimental groups, all extraneous variables (e.g., personality traits) should be distributed equally in the groups. That is, these variables cannot have a systematic relation with the independent variable and therewith, competing causes for changes in the dependent variable can be ruled out (cf. Gravetter & Forzano, 2018, pp. 157–183).

If these criteria are met, experiments have high internal validity in testing causal hypotheses. Furthermore, they are superior to correlational studies in which only the influences of known and measured extraneous variables can be controlled and the direction

of causation between two variables is often unclear (Druckman, Green, Kuklinski, & Lupia, 2011; Shadish et al., 2002, pp. 3–12). Therefore, this study uses the experimental approach to challenge the causal hypotheses. It will systematically manipulate the communication of issue-specific argument strength and of salience emphasis frames in a controlled setting and it will analyze the attitudinal effects of these manipulations.

However, even if experiments are able to draw conclusions about causality, generalizations of the revealed causal relationships remain non-deterministic but make claims regarding the probability of the occurrence of an effect (cf. Eells, 1991; Shadish et al., 2002). Furthermore, the validity and generalizability of these probabilistic results depends on the empirical operationalization of an experiment. The next subchapters elaborate this operationalization: first, on a more abstract level by explaining the construction of the experimental design and factorial treatment structure to challenge the hypotheses credibly and strongly (see **Subchapter 4.2.2**); and second, by explaining in further subchapters how this design was empirically implemented and whether this implementation was successful (see **Subchapter 4.2.3** to **Subchapter 4.4.4**).

4.2.2 Experimental design

To have the hypotheses in mind (see **Part III**) is not only necessary for the choice of method (see **Subchapter 4.2.1**) but also to select an adequate experimental design, because they should guide the factorial treatment structure of the design. The hypotheses propose main effects of three independent variables: issue-specific argument strength (H1), salience emphasis frames (H2-H3), and citizens' political value preferences (H4). Thus, to test their influence, the experimental design should consist of these three variables as independent factors. Furthermore, these factors must be clearly separated by the manipulation to avoid any confounding, most importantly between thematic information with varying argument strength and different salience emphasis frames (Leeper & Slothuus, 2017; D. A. Scheufele & Iyengar, 2017), as outlined in **Subchapter 2.8.1** and **Subchapter 2.8.2**.

To achieve this, two different communicative stimulus elements are necessary. One element should exclusively consist of new factual information about the topic under investigation, and have varying argument strength but no explicit frame contextualization. This *informational element* allows an independent test of the effect of issue-specific argument strength. The other element needs to explicitly contextualize the former element with different salience emphasis frames but without adding any further factual information about the topic. This *framing element* enables testing the independent effect of salience emphasis frames. The next question deals with how many levels these two factors – thematic argument strength in the informational element and salience emphasis frames in the framing element – should be manipulated to test the hypotheses in an appropriate way.

(Randomized) factor #1: Issue-specific argument strength

The factor issue-specific argument strength should have at least two levels: low and high argument strength for supporting a specific attitude on the topic. However, simply presenting an isolated issue-specific argument with varying strength for only one issue position has many disadvantages. First, it is unrealistic in public discourse that thematic information (not framing) for a topic is completely one-sided and only contains factual information that exclusively supports one side.

Second, some hypotheses and research questions are concerned with comparisons between different one-sided salience emphasis frames (e.g., H3). This requires that at least two different frames can be applied to the thematic information. However, this can only work appropriately when thematic information can be contextualized by a frame, which is only the case for one frame if the information is completely one-sided. The other frame would simply not have a thematic informational reference to contextualize, which is, again, unrealistic (see **Subchapter 2.8.2** for a discussion on the relation between salience emphasis frames and issue-specific arguments).

Third, it is probably more complicated for participants to understand and evaluate the strength of a single issue-specific argument when it is presented in isolation than when it is accompanied by a counter-argument, as this allows a relative assessment of argument strength (Rucker, Petty, & Briñol, 2008).

Fourth and most important, presenting only thematic information for one side, albeit with varying argument strength, favors the occurrence of effects of additional congruent frames and is thus a biased test of the hypotheses. This is because there would simply be no competing information – neither cross-thematic information in the frame nor issue-specific information in the (constant) informational element – when additional framing also emphasizes an attitude aligned with the direction of the presented issue-specific argument (Allen, 1991). Thus, this study exposed participants to two-sided thematic information in the informational element. This enabled a more rigorous test of salience emphasis framing effects, because the occurrence of a framing effect in such a situation implies that the additional frame contextualization is effective despite presenting issue-specific information that counters the frame.

However, there are different options for constructing two-sided thematic information in terms of its varying argument strength. The most comprehensive approach is to vary the argument strength for both sides: the issue-specific information that can be contextualized by the salience emphasis frame A and information that can be contextualized by counter-frame B (see again **Subchapter 2.8.2** on how frames and arguments are related). The factor argument strength would then comprise four levels (weak argument A + weak argument B; strong argument A + weak argument B; weak argument A + strong argument B; and strong argument A + strong argument B), and the hypotheses regarding the suppression of issue-specific arguments through salience emphasis frames (H5 and H6) could be tested for both frames.

Unfortunately, this study did not have infinite resources. Furthermore, two more factors had to be considered (salience emphasis frames and political value preference), further increasing the number of experimental groups. Thus, this study varied issue-specific argument strength on only two levels and presented thematic information with varying argument strength only for issue position A (weak and strong). The counter-argument related to issue position B was held constant (see the second column in **Table 7**). This still enabled testing all hypotheses. However, the suppression effect of issue-specific argument strength through value-resonant frames (H5 and H6) could only be examined for one salience emphasis frame, because the respective argument strength varied for only one frame (i.e., frame A).

To ensure the test for the general framing hypotheses (H2 and H3) for frame A was as rigorous as possible, the constant counter-argument (adhering to issue position B) should be strong rather than weak, because the occurrence of a framing effect would be more convincing if the effect exists amid strong counter-arguments suggesting that citizens should not follow the frame. In contrast, using a weak constant counter-argument could have a backfire effect that would strengthen the applicability of frame A (Chong & Druckman, 2007a), which would imply inadequate favoring of the framing hypothesis by the design. Thus, the most appropriate way to test the hypotheses meaningfully, while simultaneously not increasing the number of experimental groups too much, was to manipulate the factor issue-specific argument strength in the informational element on two levels and randomly assign participants to one of these levels: first, weak argument A vs. strong argument B and second, strong argument A vs. strong argument B.

Table 7. 2x3x2 (quasi-)experimental between-subjects design with 12 groups

Quasi-factor political value preference (2 levels)	Factor issue-specific argument strength (2 levels)	Factor salience emphasis frame (3 levels)		
		No frame	Frame A	Frame B
High preference for value A	Weak A vs. strong B	I	V	IX
	Strong A vs. strong B	II	VI	X
Low preference for value A	Weak A vs. strong B	III	VII	XI
	Strong A vs. strong B	IV	VIII	XII

(Randomized) factor #2: Salience emphasis frame

The next question was how many levels the second factor "salience emphasis frame" should be manipulated on to test the hypotheses in an appropriate way. The hypotheses and research questions are interested in both the effect of frames compared to situations without explicit framing and compared to situations with an opposite counter-frame (H2 and H3). Thus, the factor salience emphasis frame must have three levels (see also **Table 7**).

First, there should be a level without explicit frames. This is important for using this level as a reference group to compare the effectiveness of frames and no frames. The level without frames also serves as the baseline for the effects of issue-specific argument strength that should later be suppressed by a value-resonant salience emphasis frame (H5). In fact, the design had to ensure a significant effect of thematic argument strength when not explicitly contextualized through frames. If no argument effect emerged without salience emphasis frames, whether additional frames suppress the effect of issue-specific argument strength could not be analyzed. Moreover, the explanation could not be ruled out that a non-effect of argument strength under framing conditions is not the result of salience emphasis framing but is simply the consequence of a missing issue-specific argument effect in general. Of course, the isolated effect of argument strength without additional framing could also be examined in an independent pretest, instead of integrating this as a baseline "frame" level in the experiment. However, integrating this level in the design and testing the isolated issue-specific argument effect with a randomly selected subsample of the final sample has the advantage of ruling out population differences between an independent pretest and the final experiment.

The second level consisted of the salience emphasis frame A contextualizing the thematic information with the political value A, therewith suggesting an issue attitude in direction A. As the factor issue-specific argument strength only varies for attitudinal direction A (see above), the salience emphasis frame is the focus when testing the frame effects. Nevertheless, integrating only this frame in the design is insufficient to test all hypotheses.

As some hypotheses are interested in frame effects compared to one-sided exposure to a counter-frame, the factor salience emphasis frame needed a third level in which counter-frame B contextualizes the thematic information. Integrating this third level is not only important as an additional reference group to compare the general effect of salience emphasis frame A (H3), but integrating frame B also helps to test the suppression of issue-specific argument effects through frame A (H5 and H6) in a more convincing way.

The rationale for this hypothesis was that if a salience emphasis frame is value-resonant (frame A), the frame will increase motivated reasoning and suppress the effects of thematic argument strength (see **Part III**). The problem with testing this assumption only through comparisons with the baseline level without explicit frames is that the possibility could not be ruled out that the suppression simply resulted from distracting participants from the issue-specific arguments by adding additional frame A, and thus the suppression is not the actual result of motivated reasoning. Therefore, hypothesis H6 proposed examining the suppression effect of frame A compared to a non-resonant counter-frame B. If the issue-specific argument effect persists when framed with the non-resonant frame, a general effect of distraction from the arguments due to general framing can be ruled out. Thus, it was worth integrating frame B as the third level of the factor frame. Essentially, the second factor of the design should be the factor salience emphasis frame with three levels randomly assigned to the participants: no frame, frame A, and counter-frame B.

(Non-randomized quasi-) factor #3: Citizens' political value preference

In addition to issue-specific argument strength and salience emphasis frames, the design included citizens' political value preference as a third factor. This was necessary to test the general independent effect of this variable as proposed by hypothesis H4 and for all hypotheses and research questions concerned with the value resonance of frames (RQ2, H5, and H6). To obtain value resonance (or dissonance), citizens' value preferences were included in the design to generate (mis-)matches with the salience emphasis frames used in the stimuli. As explained, the core frame of the design is only one frame (frame A), because only here does the issue-specific argument strength of the thematic information vary. Thus, the design did not integrate the entire hierarchy of citizens' political value preferences, but the preference for value A, the same value frame A employs to contextualize thematic information.

However, citizens' political value preferences are stable political-psychological traits (Feldman, 1988; Goren, 2005; Jacoby, 2006) that cannot be easily manipulated in an experiment. In addition, participants cannot be randomly assigned to having either a high or low preference for a specific political value. Thus, testing its influence is limited to a role as a quasi-experimental factor without random assignment but by integrating citizens' actual preferences as further measured variable (Shadish et al., 2002, pp. 104–106). The validity of a quasi-factor, which is statistically a moderator variable, depends on its independence of the other manipulated factors (Baron & Kenny, 1986). Because political value preferences are stable traits, the manipulation of issue-specific argument strength or a salience emphasis frame in a single experiment will likely not affect these preferences, which makes value preferences a theoretically suitable quasi-factor. A formal test of the independence of the implemented quasi-factor showed that this criterion was met empirically (see **Subchapter 4.4.1**).

The next question was on how many levels to analyze the preference for political value A. In terms of statistical validity, the best would be to not restrict the number of levels, but simply use the levels of the metric measurement of value preference (Cohen, 1983). However, theoretically, two levels are sufficient to generate the necessary value resonance with salience emphasis frame A to test the hypotheses: a high preference for political value A and a low preference for value A (see also **Table 7**). The former serves to analyze the situation when frame A is value-resonant, and the latter when frame A is non-resonant.

Of course, it can be argued that a medium preference for political value A be used as a third level, enabling an analysis of value resonance and non-resonance while excluding citizens that do not clearly support or oppose the value. However, this would again increase the number of (quasi-)experimental groups, requiring an even larger sample to analyze the hypotheses with enough statistical power. Thus, in this study, only two levels were used for the factor political value preference by dichotomizing the measured metric variable for value preference (for further details, see **Subchapter 4.3.5**). This also rendered the comprehensibility of the results of the rather complex design more parsimonious than if

more levels were used or the metric quasi-factor integrated. To ensure high statistical validity, the results were subject to robustness checks for which the metric measurement for citizens' political value preference served as a quasi-factor (e.g., see **Subchapter 5.1.6**).

Summary

Based on theoretical considerations regarding internal validity and a credible test of the hypotheses, this study employed a 2x3x2 between-subjects (quasi-)experimental design (see also **Table 7**) with the randomly assigned and experimentally manipulated *factor issue-specific argument strength* (weak A vs. strong B, and strong A vs. strong B), the randomly assigned and experimentally manipulated *factor salience emphasis frame* (no frame, frame A, and counter-frame B), and the non-manipulated *quasi-factor political value preference* (low vs. high for value A). Thus far, the design has been explained on an abstract level to clarify how it would appropriately test the hypotheses. The following subchapters describe the exact operationalization of this design, starting with an in-depth discussion of the political issue used for the experiment (see **Subchapter 4.2.3**).

4.2.3 Issue selection

Criteria for issue selection

After selecting an experimental design and factorial treatment structure, the next important question to address is how to operationalize the design. Here, selecting the issue for the experimental stimuli is highly important for both the internal and external validity of an experiment. As the aim of this book is to investigate emphasis framing effects in political communication, the stimuli had to deal with a political topic. In addition, the political issue had to be relevant to society and personally important to allow the generalization of possible framing effects for this topic to other politically relevant topics. However, prior empirical results suggest that emphasis framing effects mainly occur when issue importance is low (Lecheler et al., 2009). That is, using an important topic for the experiment not only enables the more relevant generalization compared to side issues, but also makes it the more difficult and therewith the better test of the hypotheses.

Next, at least two different and well-known salience emphasis frames should be equally applicable for the issue with a comparable degree of realism and persuasive strength (often referred to as frame strength, cf. Aarøe, 2011; Chong & Druckman, 2007a). Citizens should know both salience emphasis frames so that the contextualization with these frames can be achieved without adding new thematic information to the selected topic. Preferably, the frames reflect competing ends of a political value conflict to ensure that generated value resonance is tied to only one frame, and the other is clearly a competing frame to that value. To obtain a suitable quasi-factor that delineates the participants with high and low political value preference into two equally sized groups, the distribution of the respective political value should also not be skewed too starkly in the population.

Furthermore, this study examined attitude formation, not attitude change. This required that the topic under investigation was new to participants, enabling the formation of a new and unique issue attitude based on the presented new thematic information with varying argument strength. Using a subtopic new to the participants has the additional advantages that opinions are not crystallized and a single experimental treatment is potentially sufficient to generate attitudinal effects (Chong & Druckman, 2010; Druckman et al., 2013). In addition, the topic had to be part of a broader policy field for which the connection with the chosen salience emphasis frames was established in the public discourse to ensure not only the general applicability of frames but also the applicability in the chosen thematic context.

Medical approval as a relevant political and societal issue

With these criteria in mind, this study employed a specific topic in the broader field of health politics for the experimental stimuli: a fictive approval procedure for a new cancer therapy to be available in the health system of Switzerland, the country in which this study was conducted. As in other countries, new medicaments need to be approved by the regulatory state authorities before being introduced into the market. These approval procedures evaluate the quality, safety, and effectiveness of new medical products (Swiss Agency for Therapeutic Products, 2018). They are very important for sick persons in ensuring the latest qualitative medical care, and relevant for the pharmaceutical industry, because product approval provides the opportunity to compel health insurance companies to cover the expenses of the new medicament in the basic health system. These new therapies can be very expensive, costing up to CHF 160,000 (equivalent to around $160,000 at the time of this study) per patient and year (Hehli, 2018). Thus, product approval can lead to high additional expenditures for health insurance companies.

Paying basic health insurance is compulsory for every person residing in Switzerland, and an increase in the expenditures of health insurance companies leads to higher insurance rates per capita. Between 1990 and 2015, the share of health costs of the national gross domestic product (GDP) increased from about 8% to 12% (Swiss Federal Statistical Office, 2017b), and between 1996 and 2016, the average yearly insurance fees per capita in the basic health system more than doubled from about CHF 1,800 to nearly CHF 4,000 (Swiss Federal Health Office, 2018). Current projections expect that this increase will not stop, and a yearly growth of health costs of 3.5% to 3.9% is predicted until 2019 (Köthenbürger & Sandqvist, 2018), while average inflation per year is projected at only about 1% (State Secretariat for Economic Affairs SECO, 2018). As such, the introduction of new cancer therapies can be a double-edged sword. On one hand, the basic idea of a health insurance is to provide the best means to cure diseases and help those suffering from serious illnesses such as cancer. On the other, approvals for new and very expensive therapies can overstretch the budget of the national health system in general and of individual households.

Therefore, medical approvals constantly receive media coverage in Switzerland and are not a topic exclusive to experts. Even without presenting a quantitative content analysis, some anecdotal evidence for media coverage in important Swiss newspapers such as *Neue Zürcher Zeitung* (e.g., Furger & Voigt, 2018; Hehli, 2018; Wise, 2016) and *Tagesanzeiger* (e.g., Flubacher, 2016) and by the national public broadcaster *SRG* (e.g., Schwerzmann, 2018; Woodtli, 2017) illustrates the ongoing public discussion on the approval of new medicaments in Switzerland.

Of course, political parties also participate in this discourse. For example, a few weeks after this study was conducted, namely in March 2018, the Swiss government decided to not approve a new medicament against cystic fibrosis, arguing that the price thereof was too high given its medical effectiveness (Hehli, 2018). This decision was criticized by members of parliament of the Social Democratic Party of Switzerland (SP). Consequently, in September 2018, the SP chose a different way to tackle the problem of increasing health insurance rates without denying the approval of new and potentially lifesaving medicaments. The party published a press release announcing that they plan a referendum initiative that aims to restrict the fee for the basic health insurance to not more than 10% of a household's income by granting more publically financed price reductions for individual insurance fees (SP Schweiz, 2018). These few examples substantiate that the topic chosen for the experiment clearly fulfills the criteria for selecting a relevant political and societal issue.

Medical approvals and further criteria for issue selection

Moreover, the topic of medical approvals is suitable in terms of other criteria mentioned at the beginning of this subchapter (see also **Table 8**). First, as individual insurance rates can subsequently increase through expensive approvals, the topic should have some personal importance for the participants, as every Swiss resident can be financially affected by the approval decision. Compared to most other political topics, this is rather unique and an advantage of the issue selected. Usually, political decisions do not affect all citizens in the same way, as in the case with the increasing costs in Switzerland's health system. Rather, they focus on specific subgroups (e.g., statutory minimum wage for precariously employed, mineral oil tax for car owners). However, there might be some variation in wealthier people perceive the financial impact of increased personal insurance rates compared to poorer citizens. Therefore, this study controlled for income among many other control variables (see **Subchapter 4.3.2**).

Second, different salience emphasis frames with comparable applicability can be employed to contextualize medical approvals. Essentially, the topic is a typical direct aid policy in the framework of redistributive social welfare policies. Sick persons who need the aid of a new medical therapy do not have to cover high curation costs individually. Rather, healthy people pay the same basic health insurance fees to help those suffering from a serious illness. That is, medical approval is a form of direct assistance policy for the needy. The extent to which citizens agree with such welfare measures depends on their political

value preferences for humanitarianism and economic-individualism (Feldman & Steenbergen, 2001; Shen & Edwards, 2005), which mirror the classic socioeconomic political conflict line between redistributive "left" and market-driven "right" ideologies. While a humanitarian view interprets social welfare as relevant and unconditional solidarity with the needy, economic-individualism typically argues with the goal of low community spending, emphasizing individual financial responsibility for using social services (Böcken & Altenhöner, 2011).

While not the only conflict line of political values shaping ideologies, the socioeconomic one is still a core political cleavage in modern western societies (Feldman & Johnston, 2014; Jost et al., 2009; Kaiser & Kleinen-von Königslöw, 2019; Kriesi et al., 2006). Both value orientations are well established in the political discourse and nearly all citizens know the fundamental interpretative patterns underlying these values. Thus, both political values have high applicability, and salience emphasis frames can employ these applicable values to contextualize the topic of medical approval without necessarily introducing additional new thematic information on the specific topic.

Third, compared to all other European countries, social welfare attitudes in Switzerland are much less skewed in the direction of humanitarianism and state interventionism. According to data of the European Social Survey (ESS), Swiss citizens score lowest in Europe regarding the acceptance of social benefits for the sick, the old, the unemployed, childcare, and labor law. The ESS measures social welfare attitudes with six items on an 11-point scale from 0 = "it should not be governments' responsibility at all" to 10 = "it should be entirely governments' responsibility." Swiss respondents scored the lowest average value at 6.42, i.e., relatively close to the scale midpoint of 5 (Baslevent & Kirmanoglu, 2011). In contrast, the average in most other European countries ranges from 7.50 to 8.29 in Spain and 8.30 in Hungary (i.e., starkly skewed in the direction of state interventionism).

Thus, employing a social welfare issue in an experiment in Switzerland such as the selected topic of medical approvals ensures the sample will consist of two approximately equally sized groups of citizens with different positions regarding the political values of humanitarianism and economic-individualism. This will enable employing value preferences as a quasi-factor in the experimental design without encountering the problem that group sizes are either unbalanced (e.g., 80% show a low value preference for economic-individualism) or that the cut-off value to divide the sample (e.g., the median) is too far from an appropriate theoretical value (e.g., the scale midpoint).

Fourth, to ensure the specific issue is new to participants and attitude formation can be examined, this study used a fictive new therapy against bowel cancer and thus, a fictive application for medical approval, even though as mentioned, the topic is based on the general procedure of approvals for real medicaments in Switzerland. A further advantage of a fictive approval procedure is that it gives the experiment maximum control over the "factual" thematic information citizens have about the specific subtopic, because all thematic information about the therapy can be experimentally induced (see next

Subchapter 4.2.4). This ensures the manipulation of the baseline effect of issue-specific argument strength, which is the precondition to investigate how salience emphasis framing alters this argument effect. Furthermore, the decision for fictive therapy against bowel cancer, rather than another form of cancer, is not arbitrary. Bowel cancer is one of the most prevalent cancers in Switzerland for both men and women (Swiss Federal Statistical Office, 2016), making the topic of the experiment relevant. Moreover, choosing this type of cancer is important for the realism that a single new therapy can increase insurance fees, as the new therapy would be applied to many patients.

Summary

Taken together (see also **Table 8** for a short summary), the approval procedure for a fictive new cancer therapy in Switzerland meets the mentioned criteria for the selection of an experimental issue. The topic is political in the broader field of health politics and social welfare; it is of societal relevance, both ethically and economically; it provides some degree of personal importance, as every Swiss resident can be financially affected by the approval; two equally applicable salience emphasis frames (humanitarianism and economic-individualism) at the heart of political conflict lines in Western democracies can contextualize the issue in competing ways; the distribution of these values in Switzerland is relatively balanced, facilitating the creation of a valid quasi-factor for citizens' political value preference; and using a fictive approval procedure ensures the investigation of attitude formation based on new issue-specific information and already known salience emphasis frames.

However, the generalizability of the results for this issue to other political topics depends on how prototypical it is for politics in general (Shadish et al., 2002, pp. 66–68). While medical approvals are not the most urgent political topic in Switzerland, the preceding pages have hopefully shown that the issue fulfills some of the methodological criteria for a well-designed experiment and is a relevant political topic with a clear value conflict. However, its generalizability to very broad, highly polarized, and highly salient issues such as immigration or international conflicts is maybe limited. Instead, the topic is prototypical for subordinate, more specialized issues in broader policy fields such as the introduction of new laws, work in commission, or legislative proposals; in other words, the daily business of policy-oriented politics in parliamentary democracies. This is not a bad precondition for testing the broader research question of citizens' irrationality in attitude formation through salience emphasis framing. Presumably, it is a harder and thus better test for irrationality than employing a highly emotionalized issue where facts and thematic argument strength play anyway a less relevant role.

After discussing the issue selection in detail here, the following **Subchapter 4.2.4** describes the specific experimental manipulations and explains how the two factors of issue-specific argument strength and salience emphasis frames were implemented in a stimulus for the chosen topic of medical approvals and how citizens' political value preference was integrated as a third (quasi-)factor in the study.

Table 8. Criteria for issue selection for experimental stimuli and their fulfillment by the employed topic

Criterion	Reason for criterion	Fulfillment of criterion by selected issue (approval of new cancer therapy)
Political issue	To investigate framing effects in political communication	Yes (in social welfare politics, political parties involved in public discourse on medical approvals)
Societal relevance	Generalizability to other relevant topics, more difficult test of hypotheses	Yes (constant media coverage, ethical question of how to deal with the sick and ill in society, high expenditures of health system)
Personal importance	Generalizability to other relevant topics, more difficult test of hypotheses	Yes (approval would lead to increase in personal health insurance fee)
Comparable applicability of different political values	To generate value resonance/dissonance, comparable effectiveness of frames for value conflict	Yes (humanitarianism and economic-individualism as strong and relevant political values)
Balanced distribution of political values	To obtain useful quasi-factor	Yes (attitudes of Swiss citizens on social welfare more equally distributed than in any other country in Europe)
Novelty of information	To investigate attitude formation, experimental control	Yes (general approval procedure not new, but specific inspection of application is new)

4.2.4 Experimental manipulation

Thus far, the previous subchapters discussed how the factorial treatment structure of the experimental design should look on an abstract level (see **Subchapter 4.2.2**) and which specific political issue is appropriate to fit the proposed experimental design (see **Subchapter 4.2.3**). Next, the operationalization in this study of the exact manipulations for the chosen political issue of medical approvals is explained.

Stimulus

The first question to address in terms of operationalization is what kind of stimulus or treatment should contain the manipulations of issue-specific argument strength and salience emphasis frames. As this study is concerned with communicative effects, the stimuli should be any type of communication to which participants can be exposed. The

easiest way would have been to show participants thematic arguments with varying strength in single written sentences (e.g., Taber & Lodge, 2006), and subsequently present a further written sentence containing the frame contextualization of these arguments (e.g., Leeper & Slothuus, 2017). However, this is problematic from an internal and external validity perspective.

Regarding internal validity, exposing participants to the treatments of interests without any context increases the risk of demand characteristics, i.e., participants could guess too easily the hypotheses of the investigation and respond differently than they would without knowing the researcher's intention (Weber & Cook, 1972). A compelling cover story that deceives participants about the true goal of the study may reduce this risk. However, it is questionable as to how effective a cover story can be for distraction if the stimuli are single sentences containing the manipulated factors. In terms of external validity, written isolated single sentences without any source or media environment are also not a common form of the exchange of arguments and frames in real political communication processes.

Therefore, this study did not employ as a stimulus single sentences but a mock-up online news article about the aforementioned approval procedure for the new therapy and manipulated the experimental factors in the article. Online news is a widespread way through which citizens get involved with politics. Around 70% of the Swiss residential population use online news articles at least occasionally (Swiss Federal Statistical Office, 2017c). Thus, employing such articles in an experiment implies relatively high external validity for political communication processes. In addition, it is rather easy to professionally manipulate the content of online news articles compared to audiovisual news material, for example.

Furthermore, online news articles as stimuli allow relatively convincing cover stories to deceive participants about the true intentions of the study, because they are information rich enough to tell participants the study focuses on aspects they then also see in the stimuli. This suggests they will not be immediately skeptical of the cover story. For instance, a common cover story for experiments with news articles is that the study is about the journalistic quality of articles, which can relatively effectively divert participants' focus of attention from the persuasive character of the message and avoids strong forms of reactance (for a general discussion on the relevance of reactance in persuasion research, see Dillard & Shen, 2005; Silvia, 2006). This cover story is also employed in this study (see **Subchapter 4.3.3**).

To ensure valid and non-confounded manipulations of the factors of issue-specific argument strength and salience emphasis frames (see **Subchapter 4.2.2**) in the stimulus, the online news article consisted of four parts:

(1) *Headline*: A headline varying according to the framing conditions.
(2) *Picture*: A constant neutral picture of the main building of the Federal Office of Public Health (FOPH), which is politically responsible for medical approval procedures. The picture was included to increase the realism of the news article,

because online news articles usually employ at least one picture in the article. Of course, it would also have been possible to vary the picture in line with the respective framing condition. However, this can be dangerous in terms of internal validity, as visual and textual frames can contribute differently to attitudinal and behavioral effects (Powell, Boomgaarden, Swert, & de Vreese, 2015). Furthermore, pictures can confound the displaying of emphasis frames with the displaying of other factors (e.g., emotions), and visuals that only show a rather abstract frame such as economic-individualism in a valid way are difficult to find. Thus, this study used a neutral visual and displayed only a picture of the Health Ministry to profit from higher realism for the online article by adding a picture without threatening internal validity.

(3) *Informational paragraph*: An informational paragraph that introduced substantive information about the topic including the factor issue-specific argument strength. This paragraph avoided any explicit frame contextualization but simply told the participants the basic facts about the approval procedure for the new cancer therapy in order to ensure that information (with varying argument strength) and salience emphasis frames were not confounded.

(4) *Framing paragraph*: A framing paragraph in which according to the framing condition a specific salience emphasis frame contextualized the information presented in the informational paragraph before. This paragraph avoided the adding of any further information about the topic but exclusively used well-known value frame contextualization and explained the information under the umbrella of this frame.

Figure 13 shows how the study implemented these four elements into the final stimulus. To ensure the layout of the online news article was as realistic as possible, the real online layout of one of the country's most important newspapers (*tagensanzeiger.ch*) was employed. This was possible using Firefox's inspector, a web developer tool provided in the Mozilla Firefox browser. This tool allows accessing the html code of any webpage and enables changing the original website, such as by inserting a different text or picture. The manipulated website can then be saved on a local computer and implemented in a survey. While this leads to highly realistic mock-up articles for experimental purposes, a disadvantage is that the media source could interfere or moderate the effects of the experimental factors of interest. To avoid this, while simultaneously ensuring a realistic layout, any direct references to *tagesanzeiger.ch* such as the brand logo were deleted.

Figure 13. Examples of original stimuli in German

Neue Krebstherapie würde Kassenprämien stark verteuern

Hauptsitz des Bundesamts für Gesundheit in Liebefeld (BE): Entscheidungsinstanz für Zulassungen

Linus Fassbind

@LinusFassbind

30.01.2018 13:10 Uhr

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Kommentare

Wie das Bundesamt für Gesundheit (BAG) gestern bekannt gab, wird zurzeit der Antrag auf die Zulassung einer neuen Therapie gegen Darmkrebs geprüft. Dabei geht es darum, ob diese Therapie in der Grundversicherung eingesetzt werden darf, die von allen Bürgern finanziert wird.

Prüfung des Antrags eingeleitet

Laut Bericht des BAG haben erste klinische Studien gezeigt, dass die neue Therapie durch ein verbessertes, aber teureres Verfahren direkter am Tumor ansetzen kann. Dadurch kann der Tumor mit weniger Nebenwirkungen für das benachbarte, gesunde Darmgewebe bekämpft werden. Das neue Verfahren kann so die Heilungschancen der Betroffenen Darmkrebspatienten im fortgeschrittenen Stadium etwas erhöhen. Verglichen mit bisher eingesetzten Medikamenten steigt die Heilungschance von rund 20 % auf zumindest 30 %. Das BAG hält jedoch auch fest, dass die neue Therapie deutlich mehr kostet als die bereits eingesetzten Medikamente. Sollte die Therapie zugelassen werden, würde dies für die Krankenkassen der Grundversicherung Mehrausgaben von vielen hundert Millionen Franken pro Jahr bedeuten. Nach Berechnungen des BAG würde die Zulassung für jeden Prämienzahler eine Erhöhung der Jahresprämie um ca. 300 Franken nach sich ziehen.

Finanzierung des Gesundheitssystems gefährdet

Falls die neue Therapie gegen Darmkrebs tatsächlich zugelassen werden sollte, würde das BAG also einen weiteren Kostentreiber in die Grundversicherung aufnehmen und damit die Last der Sozialabgaben weiter erhöhen. Dass eine einzelne Therapie allein zu einer solchen Erhöhung der Jahresprämie führt, ist bedenklich. Ausserdem würde die Zulassung ein völlig falsches Zeichen setzen und Mehrausgaben bei Medikamenten erneut legitimieren. Wenn das BAG bei den Zulassungen nicht bald umdenkt und weiter immer mehr teurere Medikamente zulässt, werden die jetzt schon hohen Kosten in der Grundversicherung immer weiter zunehmen. Vor allem, da es für Darmkrebs bereits andere, wirksame Medikamente zu deutlich geringeren Kosten gibt. Das BAG sollte stattdessen endlich auch wirtschaftliche Aspekte, sprich die steigenden Mehrkosten, in ihre Entscheidungen miteinbeziehen. Sonst wird die Abgabenbelastung für die Prämienzahler niemals aufhören weiter zu steigen und die Finanzierung des Gesundheitssystems wird mittelfristig kollabieren.

Neue Krebstherapie könnte Erkrankten erheblich helfen

Hauptsitz des Bundesamts für Gesundheit in Liebefeld (BE): Entscheidungsinstanz für Zulassungen

Linus Fassbind

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Prüfung des Antrags eingeleitet

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Solidarität für die Schwächsten sichern

Falls die neue Therapie gegen Darmkrebs tatsächlich zugelassen werden sollte, würde das BAG also eine wichtige Hilfeleistung in die Grundversicherung aufnehmen und damit die Solidarität mit den Erkrankten sicherstellen. Dass es eine neue Möglichkeit der Therapie gegen Darmkrebs gibt, ist wichtig für die Erkrankten. Vor allem, wenn diese im Vergleich zu den bereits existierenden Medikamenten deutlich wirksamer ist. Ausserdem würde die Zulassung ein starkes Zeichen setzen und die solidarischen Aufgaben der Grundversicherung sicherstellen. Das BAG sollte bei den Zulassungen das Wohl der Kranken in den Mittelpunkt stellen, damit die hohe Qualität der Fürsorge im Gesundheitswesen weiter aufrechterhalten bleiben kann. Schliesslich ist es das Wesen einer Solidargemeinschaft, den unverschuldet Erkrankten immer die bestmögliche medizinische Versorgung zu gewährleisten. Das BAG täte gut daran, wirksamere Therapien in der Grundversicherung zuzulassen, sonst wird die Solidarität im Gesundheitssystem mittelfristig kollabieren.

Note. Left figure displays strong issue-specific argument against approval with salience emphasis frame economic-individualism in the last paragraph, right figure shows weak issue-specific argument against approval with salience emphasis frame humanitarianism in the last paragraph, see https://doi.org/10.23662/FORS-DS-1013-1 for all original stimuli

Manipulation of issue-specific argument strength in the informational paragraph

Regarding the specific manipulation of the experimental factors in the online news article, the first relevant aspect is which issue-specific arguments, salience emphasis frames, and political values the stimuli should contain. As **Subchapter 4.2.3** explained, the political values of economic-individualism and humanitarianism are well qualified to contextualize the issue of a new approval procedure for a cancer therapy. Thus, these values were used together with a no-frame condition for the three-level factor salience emphasis frame (see **Table 9**).

However, for which of these frames should issue-specific argument strength vary in the informational part (see **Subchapter 4.2.2** for a discussion on why argument strength should vary for only one issue position)? For the purposes of this study, it was decided to vary the thematic argument strength for opposing the approval of the new therapy and therewith, the issue-specific argument strength connected to the salience emphasis frame employing the political value of economic-individualism. The issue-specific argument strength for supporting the approval was held constant, even though it would have been similarly possible to manipulate the issue-specific argument strength for supporting the approval, while holding constant the thematic argument strength against the approval.

Table 9. Employed issue-specific argument strength, salience emphasis frames, and citizens' political value preference for 2x3x2 (quasi-) experimental between-subjects design

Quasi-factor political value preference for economic-individualism	Factor issue-specific argument strength against approval	Factor salience emphasis frame		
		No frame	Frame economic-individualism	Frame humanitar-ianism
High preference for economic-individualism	Weak argument against approval (CHF 10 costs) vs. strong argument for approval (30% efficacy)	I	V	IX
	Strong argument against approval (CHF 300 costs) vs. strong argument for approval (30% efficacy)	II	VI	X
Low preference for economic-individualism	Weak argument against approval (CHF 10 costs) vs. strong argument for approval (30% efficacy)	III	VII	XI
	Strong argument against approval (CHF 300 costs) vs. strong argument for approval (30% efficacy)	IV	VIII	XII

What did the manipulation of issue-specific argument strength look like? As mentioned, argument strength was manipulated without naming an explicit frame contextualization in the informational paragraph that presented basic information about the approval procedure and the new therapy that sought approval. In the experimental condition with weak issue-specific argument strength for opposing the approval, participants read that the new therapy would be only slightly more expensive than existing medicaments for bowel cancer and only cost the basic health insurance system a few million francs in total (see **Table 10** for the exact wording of all experimental conditions). This would lead to a very small increase of the yearly personal insurance fee of about CHF 10 for everyone in the country, while the therapy would increase the chances for curation from 20% to 30% (constant strong issue-specific argument for supporting the approval). In a country such as Switzerland, which has a yearly personal median income of about CHF 78,000 (Swiss Federal Statistical Office, 2018a), paying CHF 10 more per year to support people suffering from cancer seems a weak issue-specific argument for opposing a more effective therapy.

In contrast, the experimental condition with high thematic argument strength for opposing the approval also told participants that the new therapy increases the chances for curation from 20% to 30%, but this therapy would be considerably more expensive than existing medicaments, leading to additional costs of some 100 million of francs for the basic health system. This would increase the personal insurance fee by CHF 300. Compared to the roughly CHF 40 Swiss households (not individuals) donate overall per year (Swiss Federal Statistical Office, 2017a), this CHF 300 increase in insurance fees is rather high, and should be a much more compelling issue-specific argument to oppose the approval of the new therapy than the condition with the weak argument (CHF 10). Both manipulations were the same length in the stimulus. The exact wording of the informational paragraph is shown in **Table 10**.

In terms of realism, the increase of CHF 300 per person per year should still be credible for the introduction of a new bowel cancer therapy, despite sounding like a rather high amount. The average yearly insurance fee in Switzerland is about CHF 4,000 per person and thus, the CHF 300 more per year equates to a 7.5% increase in insurance rates. This is comparable to the real yearly increase of insurance fees of about 3% in the last 15 years in Switzerland up to 7.3% between 2009 and 2010 (Swiss Federal Health Office, 2018). Thus, participants should be familiar with the increase noted in the stimuli, because a similar amount is reflected in their real insurance invoices. As part of the treatment checks, this study also evaluated the perceived realism of both issue-specific cost arguments (CHF 10 / CHF 300) and the constant issue-specific argument of increased opportunities for curation, revealing that participants did not perceive the thematic arguments as implausible (for an in-depth analysis, see **Subchapter 4.4.2**).

Table 10. Translated manipulations of issue-specific argument strength and salience emphasis frames in the stimulus news article

Framing device	Framing condition		
	Economic-individualism	No frame	Humanitarianism
Headline	**New cancer therapy would strongly raise insurance rates**	**New cancer therapy for approval**	**New cancer therapy could help sick people substantially**
Picture (constant)	Main building of health ministry		
Informational paragraph (constant but with varying second factor argument strength [in brackets])	The federal health ministry (BAG) announced yesterday that it is inspecting the application for a new bowel cancer therapy. The approval procedure is concerned with the question of whether the new therapy could be employed in the basic health insurance that must be financed by all citizens. **Inspection of the application has commenced** According to a report by the BAG, initial clinical studies have shown that the new therapy can tackle the tumor more directly through an improved but more expensive procedure. Thereby, the tumor can be fought with fewer side effects on the adjacent, healthy tissue. By applying this method, the new therapy can somewhat increase the chances of a cure for patients affected by bowel cancer in an advanced stage. Compared to medicaments already used, the chances of a cure increase from 20% to at least 30%. However, the BAG also pointed out that the new therapy costs [considerably more / a little more] than the medicaments employed so far. This would lead to additional expenditures of [many hundred million / a few million] francs for the health insurances of the basic health system, if the therapy is approved. According to calculations of the BAG, approval would entail for each insured person an increase of the yearly insurance rate of ca. [10 / 300] francs.		
Framing paragraph	**Funding of the health system endangered** The BAG would impose an additional cost-pusher in the basic health system and therewith continue to increase the burden of social security contributions if the new bowel cancer therapy is approved. It is alarming that one single therapy could lead to such an increase of the yearly insurance rates. Furthermore, the approval would take a completely wrong stand and again legitimize additional expenditures for medicaments. The already high costs in the basic health insurance will keep increasing if the BAG does not rethink its policy and continues to approve more expensive medicaments, especially when there are already effective medicaments for bowel cancer that are considerably cheaper. Instead, the BAG should consider economic aspects such as the increasing additional expenditures when making such decisions. If not, the burden of dues for the insured will never stop increasing and the funding of the health system will collapse in the medium term.	none	**Ensure solidarity for the weakest** The BAG would add an important aid in the basic health system and therewith ensure solidarity with sick persons if the new bowel cancer therapy is approved. It is important to provide sick persons with a new opportunity to cure bowel cancer, especially when it is considerably more effective than existing medicaments. Furthermore, approval would take a stand and guarantee the solidary assignment of the basic health insurance. The BAG should focus on the well-being of sick persons when deciding about approvals to maintain the high quality of care in the health system. After all, it is the essence of a solidarity group to always ensure the best possible medical treatments for persons sick through no fault of their own. It would be good if the BAG approves more effective therapies for the basic health insurance. Otherwise, solidarity in the health system will collapse in the medium term.

Furthermore, the selection of the issue-specific argument strengths finally employed was based on various pretests to ensure they would lead to different attitudinal effects, which is the precondition for the successful implementation of the experimental design (see **Subchapter 4.2.2**). Briefly, these pretests revealed two important insights.

First, when participants were exposed to the isolated thematic argument of increased costs through the new therapy without presenting the counter-argument of its effectiveness in the first pretest with undergraduate students, respondents struggled to estimate the strength of the issue-specific argument because of the lack of a comparison standard. This led to many missing values. Furthermore, participants' open answers at the end of the questionnaire indicated that they were unable to decide whether the amount of costs is a strong or weak argument to oppose approval, because they could not compare it to further issue-specific information. This can be partly explained by the sample of undergraduate students, as their parents likely pay the insurance fees. Thus, they are less familiar with the costs of their health insurance. However, it also revealed that the manipulation of issue-specific argument strength would work better by introducing a standard of comparison, i.e., by adding the counter-argument of the effectiveness of the new therapy.

Second, a further pretest that included this counter-argument besides the varying cost argument and used a quasi-representative interlocked quota sample revealed that a spread between the weak (CHF 18) and the strong argument (CHF 216) to oppose the approval of the new therapy of around 12 times was not sufficient to effectively manipulate the issue attitude. At least, it led to differences in the perception of issue-specific argument strength in the baseline groups without frames.

A third and final pretest, again with a quasi-representative interlocked quota sample, increased this spread to 30 times (weak costs: CHF 10 vs. strong costs: CHF 300), while again integrating the constant counter-argument of increased effectiveness (chances of curation from 20% to 30%). This led to the expected differences in issue attitude based on issue-specific argument strength without additional framing. Therefore, this manipulation was used for the main study. **Subchapter 4.4.3** reports extensively that the thematic argument strengths finally implemented were as effective as intended.

Manipulation of salience emphasis frames in the framing paragraph

In addition to the manipulation of issue-specific argument strength, **Table 10** also shows the exact wording for the manipulation of salience emphasis frames as the second experimental factor of the design. As mentioned, this factor contained three levels. The first level comprised stimuli with varying issue-specific argument strength but without any explicit frame contextualization. This level served as control groups for assessing the isolated influence of thematic argument strength. It was obtained by showing only the informational paragraph as a stimulus and not also the framing paragraph. In addition, the headline avoided any direct frame references and was highly descriptive, simply naming the issue of the news article ("New cancer therapy for approval").

In contrast, the other two levels presented a dedicated additional framing paragraph and used different political values to contextualize the initial informational paragraph without adding any further information about the topic. Rather, well-known salience emphasis frames were used to explain and evaluate the information presented before. One level used the political value of economic-individualism for contextualization, and the other level applied the value of humanitarianism (cf. Feldman & Steenbergen, 2001; Shen & Edwards, 2005). Both values were likewise appropriate to frame the issue of medical approvals, because they draw on competing, equally applicable political values to give meaning to the issue (for a longer explanation, see **Subchapter 4.2.3**).

The economic-individualism salience emphasis frame highlighted the additional expenses that would result from approval of the therapy, which was mentioned before in the informational paragraph. It used an individualistic, market-oriented ideology to explain the issue. The frame argued that an approval would be a further example of seriously threatening the financial stability of the basic health care system, which would reinforce the ongoing increase of health insurance rates for everyone – ill or not. Furthermore, the economic-individualism frame stated that the politically responsible Federal Office of Public Health should finally stop this increase by not approving the new, more expensive therapy.

In contrast, the humanitarianism salience emphasis frame did not refer to the additional expenditures, but highlighted the increased opportunities for curation provided by the new therapy. It was a similar length to the other framing condition. The frame's viewpoint centered on the duty of solidarity and humanitarianism fundamental for the functioning of the basic health care system. From this view, each new and more effective medical treatment should be available through basic health insurance to ensure the best medical care for everyone. To maintain the idea of a humanitarian health system, the Federal Office of Public Health should always approve new therapies, as long as these are more effective, a requirement met by the new bowel cancer therapy (again, see **Table 10** for the exact wording of the frames).

As the description of the salience emphasis frames shows, both frames contextualized the given information under the umbrella of a specific political value and used common interpretative patterns to give meaning to the information presented before. However, the frames simultaneously avoided adding any new topical information about the approval procedure or the therapy. As such, the informational situation was the same in all framing conditions (except for the varying argument strength). Besides the construction of the salience emphasis frames in the framing paragraph, the headline also varied according to the framing condition ("New cancer therapy would strongly raise insurance rates" vs. "New cancer therapy could help sick people substantially"), again without adding new information.

To avoid the favoring of either the framing effect or the effect of argument strength, both paragraphs – the informational paragraph and the framing paragraph – were the same length. In addition, both paragraphs seemed to be written by the same (fictive) journalist

without an ideological affiliation. This journalist based his article on information by the non-partisan Federal Office of Public Health. The construction of the stimuli intentionally avoided the use of politicians or experts with a political stance. This is highly important in avoiding the problem of confounding salience emphasis frames and partisan cues of the speaking source. Empirical research suggests that partisan cues can influence motivated reasoning and perception of argument strength (Druckman et al., 2013; Slothuus & de Vreese, 2010). Therefore, if such cues are integrated in the stimuli, it would be unclear whether "frame effects" actually derive from the salience emphasis frames or not simply from the partisan cues.

Quasi-experimental factor value preference for economic-individualism

In addition to the factors of issue-specific argument strength and salience emphasis frames, the design integrated the last factor of citizens' political value preference as a two-level quasi-experimental factor. This was because these preferences are difficult to manipulate, but stable traits (for further details, see **Subchapter 4.2.2**). As argument strength only varied for opposing the approval and therewith for the contextualization with the economic-individualism frame, the value preference for economic-individualism is most important in analyzing the suppression of issue-specific argument effects through value-resonant framing (H5 and H6). Thus, citizens' preference regarding this political value builds the quasi-experimental factor with the levels of low and high preference for economic-individualism (see **Table 9**).

Subchapter 4.3.5 explains how participants were delineated according to their political value preference. Before then, **Subchapter 4.3.1** provides an overview of the sample of citizens that participated in the experiment, explaining who was grouped based on their political values.

4.3 Sample, measures, and procedure

4.3.1 Sample

The experimental treatments shown in **Subchapter 4.2.4** were analyzed with a sample of residents of Switzerland. As noted, conducting the experiment in Switzerland has the methodological advantage that the distribution of social welfare attitudes and socioeconomic political values is potentially more balanced than in all other European countries, enabling a better integration of citizens' political value preference as a quasi-factor in the experimental design (see **Subchapter 4.2.3**). However, Switzerland has four different official languages dividing the country into four language regions (German, French, Italian, and Romansh). This complicates the implementation of nationwide studies in terms of accurate sampling and regarding treatment and measurement invariance between the language regions. Thus, this study only focused on the biggest language region,

the German-speaking part of Switzerland in which 70.9% of the Swiss residential population lives (Swiss Federal Statistical Office, 2018d).

To ensure the generalizability of the experimental results to the population of German-speaking Switzerland, the online access panel by Respondi AG was used in this study to randomly recruit participants. The panel consists of approximately 20,000 Swiss residents. Around 90% of those are located in German-speaking Switzerland (Respondi AG, 2018). The panel is not fully representative but covers most sociodemographic variables approximately representative such as occupation, income level, education, and age. However, it does not perfectly cover sex, because men are over-represented at 63.5% (Respondi AG, 2018).

From this panel, an interlocked quota sample was drawn from the Swiss residential population representative for sex and aged between 18 and 69 years. To ensure enough statistical power, the sample size was set to $N = 833$ (see **Subchapter 4.4.4** for further details on the calculation), and participants received vouchers after completing the survey. As **Table 11** shows, the final sample consisted of $n = 420$ women (50.4%) and $n = 413$ men (49.6%), which matches exactly the distribution of sex in the Swiss population (see **Table 12**). In addition, the distribution of age groups is approximately comparable between the drawn sample and Swiss residents aged between 18 and 69 years. Furthermore, **Table 11** shows that age and sex were not only represented correctly on aggregate, but also within respective subgroups (e.g., the share of men and women for people aged between 18 and 29 years approximately matched its share in the population). As such, the interlocked quota sampling worked well.

The average age in the sample was $M = 42.92$ years with a standard deviation of $SD = 14.41$ (see **Table 13**), which is close to the average age of the Swiss residential population of $M = 42.1$ (see **Table 14**). In terms of education, the sample was slightly better educated than the population. While about 53% ($n = 440$) of the sample reported having obtained at least a high school degree, in the Swiss population, only 39.6% of residents have obtained at least a high school degree (Swiss Federal Statistical Office, 2018b). In contrast, the income of the sample approximately matched that of the population. Income was roughly measured on a seven-point scale ranging from 1 = "less than CHF 25,000" to 7 = "more than CHF 150,000," where each scale point indicates an increase of CHF 25,000 (**Subchapter 4.3.2** provides more information on the measurement of income and all other variables). The median was $Mdn = 3$, equating to an income of between CHF 50,000 and CHF 74,999, and the exact mean was slightly higher at $M = 3.14$ (see **Table 13**). That is, the average income of the sample is probably somewhat but not much higher than CHF 75,000, which is close to the median income of the Swiss population of CHF 78,024 (see **Table 14**).

Table 11. Interlocked quota sample (N = 833)

Sex	Age group					Sum
	18-29 years	30-39 years	40-49 years	50-59 years	60-69 years	
Women	88 (10.6%)	85 (10.2%)	99 (11.9%)	81 (9.7%)	67 (8%)	420 (50.4%)
Men	91 (10.9%)	82 (9.9%)	92 (11.1%)	81 (9.7%)	67 (8%)	413 (49.6%)
Sum	179 (21.5%)	167 (20.1%)	191 (23.0%)	162 (19.4%)	134 (16%)	833 (100%)

Note. Displayed is *n* with percentages in parentheses for self-defined interlocked quotas

Table 12. Distribution of sex by age group of the Swiss residential population in 2017

Sex	Age group					Total
	0-19 years	20-39 years	40-64 years	65-79 years	80+ years	
Women	9.7	13.2	17.4	7.0	3.1	50.4
Men	10.3	13.5	17.6	6.2	2	49.6
Total	20.0	26.7	35.0	13.2	5.1	100

Note. Displayed are percentages; data and age grouping based on the Swiss Federal Statistical Office (2018c)

Table 13. Demographic statistics of the sample (N = 833)

Variable	Distribution of categories	*M*	*Mdn*	*SD*	*n*
Age		42.92	43.00	14.41	833
Sex	n_{women} = 420 (50.4%), n_{men} = 413 (49.6%)				833
Education	$n_{low\ (less\ than\ high\ school)}$ = 390 (47.0%), $n_{high\ (at\ least\ high\ school)}$ = 440 (53.0%)				830
Income		3.14	3.00	1.55	698

Note. Income measured from 1 = "less than CHF 25,000" to 7 = "more than CHF 150,000" and each scale point indicates an increase of CHF 25,000

Table 14. Demographic statistics of the Swiss residential population in 2016

Variable	Distribution of categories	*M*	*Mdn*
Age		42.1	
Sex	Women = 50.4%, men = 49.6%		
Education	Less than high school = 60.4%, At least high school = 39.6%		
Income			CHF 78,024

Note. Data based on the Swiss Federal Statistical Office (2018a, 2018b, 2018c)

Summary

In sum, the interlocked quota sample well represents the residential population of German-speaking Switzerland in terms of key demographic variables. Thus, the sample fulfills an important prerequisite for drawing statistical conclusions regarding residents of German-speaking Switzerland, strengthening the external validity of the experiment (Shadish et al., 2002, pp. 91–93). However, people agreeing to participate in online access panels might be a systematic group in terms of variables other than socio-demographics, which can limit statistical inference. In particular, personality traits such as extraversion and openness to experience seem to predict participation in online access panels leading to the problem that both traits are more prevalent in these samples than in the population (Brüggen & Dholakia, 2010). In contrast, regarding key political variables such as political ideology, which are also important in this study, online access panels do not seem strongly biased (Clifford, Jewell, & Waggoner, 2015).

Thus, the drawn sample is an imperfect but robust foundation from which to generalize the experimental results beyond the narrow sample to German-speaking Switzerland. Generalizations to other countries are, of course, more uncertain, but not impossible, because the political value preferences and salience emphasis frames employed in the experiment are also a central socioeconomic political conflict line in other Western democracies (see **Subchapter 4.2.3**). Next, **Subchapter 4.3.2** describes the variables measured among the sample.

4.3.2 Measures

This subchapter provides an overview of the item wordings of the measures employed in the questionnaire for the experiment. The overview is structured according to the analytical role of the variables in the process of emphasis framing effects starting with the dependent variables. The order of these measurements in the questionnaire is outlined in **Subchapter 4.3.3** and the psychometric properties of the variables are reported in **Subchapter 4.3.4** and **Subchapter 4.3.5**.

Dependent variables

Given the hypotheses and topic of the stimulus article (see **Subchapter 4.2.3**), the main dependent variable measured was participants' *issue attitude* toward the approval of the new therapy. Because the issue under investigation is new and connected to the specific therapy mentioned in the stimuli, it was not possible to measure issue attitude with an established scale. Thus, three self-constructed items were employed in the study to measure how strongly citizens opposed (1) or supported (6) the approval of the new cancer therapy for basic health insurance (for the exact wording, see **Table 15**). As such, a six-point scale without a midpoint was employed.

Table 15. Translated wording of all items for the dependent variables

(Latent) variable	Item wording	Answer format
Issue attitude	#1 "In my opinion, the new therapy should definitely be approved" #2 "I consider the approval of the new therapy completely appropriate" #3 "I believe the approval of the new therapy is fully right"	1 = "do not agree at all" to 6 = "completely agree," items rotated
Attitude importance (first two items by Haddock, Rothman, Reber, & Schwarz, 1999)	#1 "My opinion regarding approval of the cancer therapy means a lot to me" #2 "My attitude regarding approval of the cancer therapy is important to me" #3 "My stance on approval of the cancer therapy is important to me"	1 = "do not agree at all" to 6 = "completely agree," items rotated
Attitude certainty (slightly adapted subscale certainty of attitude correctness by Petrocelli et al., 2007)	#1 "How certain are you that your opinion regarding approval of the therapy is the right opinion on that topic?" #2 "How sure are you that only your opinion can be the correct one when looking at the facts regarding the therapy?" #3 "How certain are you that among all possible opinions regarding approval of the therapy your opinion is the right one?"	1 = "very uncertain" to 6 = "very certain," items rotated
Paying intention	#1 "How much more francs are you willing to pay for your basic health insurance fee per year?"	open answer in CHF

Note. See https://doi.org/10.23662/FORS-DS-1013-1 for the original questionnaire

While there is scientific consensus that rating scales should consist of five to seven scale points, there is lively scientific debate on whether the scales should incorporate a scale midpoint (Menold & Bogner, 2016). This study weighted the concern of satisficing respondents as more important than the potential benefits of integrating a scale midpoint such as using the midpoint as an implicit "don't know" option. Satisficing respondents are participants who are not fully motivated to participate in surveys and use the middle category as a cognitive shortcut, which allows them to not ponder the question and simply reply with an indifferent answer (Menold & Bogner, 2016).

In particular, this problem arises when participants receive vouchers to complete a survey, which provides them with extrinsic motivation to quickly complete the questionnaire. Furthermore, participants get to know something about the experimental issue after reading the stimulus. Thus, they should at least to some extent have an opinion compared to pure survey research in which there might be questions for which participants

are completely indifferent because they never considered the questioned topic before. Thus, for important questions such as the dependent variable or the mediator variables, this study employed a six-point scale without a midpoint (for further actions to improve data quality, see **Subchapter 4.3.3**).

In addition to the main dependent variable for the hypotheses, the questionnaire included three further dependent variables that are not part of the analyses in the results section of this book (see **Part V**). They are reported here for reasons of transparency as measured variables: *attitude importance*, *attitude certainty*, and *paying intention* (see **Table 15**). As these three additional variables were measured after the main dependent variable of issue attitude (see **Subchapter 4.3.3**), spillover effects of the additional variables on the main dependent variable can be ruled out. Thus, measurement of these variables should not contaminate the main dependent variable.

When conceptualizing the study, the idea was to analyze in a small side project whether frames can also influence these dependent variables. However, this goes beyond the scope of this book, which is concerned with the classic and most important outcome of framing effects, namely effects on issue attitude (see **Subchapter 2.1.2**). Nevertheless, the R-script available via https://doi.org/10.23662/FORS-DS-1013-1 reports for reasons of transparency a series of statistical models that consistently revealed null findings regarding the additional dependent variables.

Mediator variables

Previous research on the mediation of emphasis framing effects has employed self-constructed items to measure belief content and belief importance (e.g., Druckman & Nelson, 2003; Lecheler et al., 2009; Lecheler & de Vreese, 2012; Nelson, Oxley et al., 1997; Nelson & Oxley, 1999; Slothuus, 2008). No common scales exist for these constructs, because they have always been connected to the specific stimulus of the experiment. To measure belief content, for example, items must ask for specific topical information in the stimulus and cannot simply use a generic scale. In contrast, for the belief importance of political values for the specific topic, it would have been possible to employ an existing scale because value emphasis frames are applicable to various issues. However, while the effects of the economic-individualism and humanitarianism frames have already been analyzed in empirical research (e.g., Shen & Edwards, 2005), these studies did not investigate the mediation of these effects via belief importance; thus, no established scale is available. Furthermore, for the third mediator of belief evaluation, an established scale cannot exist, as this study is the first to introduce the concept (see **Subchapter 2.8.4**). Therefore, all three mediators were measured with self-constructed scales inspired by previous research (see **Table 16**).

Table 16. Translated wording of all items for mediators

(Latent) variable	Item wording	Answer format
Belief importance economic-individualism	#1 "I find it important that new therapies only receive approval when the financial costs are not too high" #2 "It is important to me that approval for therapies is only given if these therapies are not too expensive" #3 "For me, it is important there is only approval for new therapies when the price is not too high for these therapies"	1 = "do not agree at all" to 6 = "completely agree"
Belief content economic-individualism	#1 "The new therapy is very expensive" #2 "The new therapy causes very high costs" #3 "The new therapy leads to very high additional expenses"	1 = "do not agree at all" to 6 = "completely agree"
Belief evaluation economic-individualism	#1 "The amount of costs of the new therapy is a strong argument to refuse approval of the medicament" #2 "The price of the new therapy is a compelling reason to not approve the medicament" #3 "The financial expenses for the new therapy are a convincing justification to deny approval of the medicament"	1 = "not agree at all" to 6 = "completely agree"
Belief importance humanitarianism	#1 "I find it important that the community always enables the best possible medical care for sick persons" #2 "It is important to me that society shows solidarity with sick persons and provides all available therapies for them" #3 "For me, it is important that a community of solidarity does everything to improve the situation of persons with cancer"	1 = "do not agree at all" to 6 = "completely agree"
Belief content humanitarianism	#1 "The new therapy is very effective" #2 "The new therapy helps sick persons very well" #3 "The new therapy improves the situation of sick persons significantly"	1 = "do not agree at all" to 6 = "completely agree"
Belief evaluation humanitarianism	#1 "The increase in the chance of recovery through the new therapy is a strong argument to support approval of the medicament" #2 "The increased chance of recovery through the new therapy is a compelling reason to approve the medicament" #3 "The increased chance of recovery is a convincing justification to support approval of the medicament" # awareness check: "Please check box number two to show you read this question"	1 = "do not agree at all" to 6 = "completely agree"

Note. See https://doi.org/10.23662/FORS-DS-1013-1 for the original questionnaire

This study measured all three mediators (belief importance, belief content, and belief evaluation) twice: once for economic-individualism and once for humanitarianism. Three items on six-point scales were used for each variable, as it was already done for the dependent variables. **Table 16** provides the exact wording of all items. The measure for *belief importance of economic-individualism* asked participants how important it is to them in general that approvals for new therapies are not too expensive, while for *belief content of economic-individualism*, participants had to rate how expensive the new therapy was in their opinion. The items measuring participants' *belief evaluation of economic-individualism* asked them to judge whether the increase in costs is a compelling reason to oppose the approval of the new therapy, and how they evaluated the specific information about the therapy (not the general applicability of the emphasis frame economic-individualism as asked by the measure for belief importance).

The study also measured belief importance, belief content, and belief evaluation for the competing information in the stimulus regarding humanitarianism (again, see **Table 16**). However, the later data analyses for the mediation processes do not include these three variables, because issue-specific argument strength in the stimuli was constant for humanitarianism, varying only for economic-individualism (for a detailed explanation, see **Subchapter 4.2.2**). As **Table 16** shows, the last item of the measure for belief evaluation of humanitarianism was an instructed response item ("Please check box number two to show that you read this question"). This served to assess participants' awareness when answering the items (Meade & Craig, 2012). Information on how the instructed response items contributed to the process of data cleansing is elaborated in **Subchapter 4.3.3**.

Quasi-factor value preference

Regarding participants' political value preferences, this study measured two different political values. The preference for economic-individualism was the quasi-factor of interest (for a detailed discussion, see **Subchapter 4.2.4**), while the value preference for humanitarianism was measured to test the validity of the relevant preference for economic-individualism by comparing it with this counter-value (the formal tests of convergent validity are elaborated in **Subchapter 4.3.5**).

The literature includes various scales to measure both value preferences. The reliability of these scales is often at the lower limit of acceptable reliability: $\alpha = .60$ (Goren, 2001), $\alpha = .65$ (Feldman, 1988), $\alpha = .66$ (Shen & Edwards, 2005), and $\alpha = .71$ (Barker & Carman, 2000) for economic-individualism, and only slightly better for humanitarianism at $\alpha = .80$ (Steenbergen, 1996), $\alpha = .76$ (Shen & Edwards, 2005), and $\alpha = .69$ (Feldman & Steenbergen, 2001). This is unsurprising given the complex nature of political value preferences. However, low reliability can increase the problem of measurement error, which can lead to more biased estimates of statistical significance and effect sizes (Loken & Gelman, 2017).

Thus, this study relied on self-constructed measures for both values and did not employ an existing scale (see **Table 17**). To achieve rather high reliability and an exact match with the salience emphasis frames presented in the stimuli (see **Subchapter 4.2.4**), the items directly asked about the ideological core of both political values in a narrow sense rather than for the broader multifaceted value concept, as the other scales mentioned often do.

This narrow sense is the political conflict line in social welfare attitudes between humanitarianism as unconditional and solidary help to individuals by society on one hand and on the other, economic-individualism that represents favoring individual responsibility for one's own wealth and of a small government that should not spend too much money on aid to individuals (Feldman & Steenbergen, 2001). Thus, the four items for measuring the *political value preference for economic-individualism* simply asked participants how much financial considerations should constrain the aid given to individuals by society in their opinion (see **Table 17**). In contrast, the four items for *value preference for humanitarianism* included statements for the opposite stance. Participants had to evaluate how strongly they support societal aid to individuals regardless of its financial costs.

Table 17. Translated wording of all items for quasi-factor political value preference

(Latent) variable	Item wording	Answer format
Political value preference for economic-individualism	#1 "Our society should not risk its wealth by constantly spending money on aid to individuals" #2 "The financial costs must not be too high when society helps individuals" #3 "A developed society implies that it has an eye on financial expenses instead of supporting individuals with money" #4 "Financial solidity is crucial for society and cannot be endangered by welfare spending that is too high"	1 = "do not agree at all" to 6 = "completely agree," items rotated
Political value preference for humanitarianism	#1 "Aid to individuals should be granted by society without constantly looking at the financial costs" #2 "The financial costs should not play any role when society helps individuals" #3 "A developed society implies that it supports individuals without always prioritizing concerns about financial costs" #4 "Solidarity is crucial for society and cannot be a question of related financial costs"	1 = "do not agree at all" to 6 = "completely agree," items rotated

Note. https://doi.org/10.23662/FORS-DS-1013-1 for the original questionnaire

Treatment check variables

The study also contained several treatment checks to test whether participants perceived the experimental stimuli as intended (for the formal tests, see **Subchapter 4.4.2**). While the preceding measurements consisted of several items to measure the relevant constructs as reliably as possible, the treatment check variables were only measured with single items to save valuable time in completing the questionnaire (see **Table 18**). Two independent single-choice items asked respondents questions about the content of the news article to measure whether they read it. The first asked about the type of cancer the new therapy would address (*article awareness #1*), which the article mentioned five times and was rather easy to answer. The second was slightly more difficult, asking about which health system the new therapy sought approval from (*article awareness #2*). For later data cleansing, only the first and easier question was used (for more details, see **Subchapter 4.3.3**).

Two further single-choice questions asked whether participants correctly remembered the exact amount of the increase in health insurance fees due to the new therapy and the increased efficacy of the new therapy. This tested whether they recognized the central manipulation of issue-specific argument strength (variables *recognition costs* and *recognition efficacy*).

Furthermore, participants rated the realism of the mentioned costs and efficacy on two seven-point scales ranging from 1 = "completely unrealistic" to 7 = "completely realistic" (variables *perceived realism of costs* and *perceived realism of efficacy*). Three additional seven-point rating scales measured whether participants perceived the manipulation of the salience emphasis frames as intended. First, participants had to rate whether the article opposed (-3) or supported (+3) the approval of the new therapy or whether they perceived the article as balanced (0) (*perceived article direction*). Second, participants assessed whether the article emphasized the costs (-3) of the therapy or its benefits (+3), or whether the article was balanced (0) (*perceived article frame*). Both items were rescaled to scales ranging from 1 to 7. Third, the variable *perceived article contextualization* asked participants how strongly the article contextualized the issue of the approval of the new therapy on a scale ranging from 1 = "not contextualized at all" to 7 = "extensively contextualized."

Last, participants rated the overall quality of the online news article serving as the experimental stimulus (variable *article evaluation*). This variable employed six items to measure the construct, not only one as did the other treatment check variables. The main reason was that this variable also served to maintain the realism of the cover story. Therefore, it was necessary that at least a few questions pertained to the journalistic quality of the article (see **Subchapter 4.3.3**). Three of the six items (realistic, credible, and coherent) originated from a measure for article evaluation used in emphasis framing effects research by Matthes and Schemer (2012), the other three items were self-constructed.

Table 18. Translated wording of all items for treatment checks

(Latent) variable	Item wording	Answer format
Article awareness #1	"Please select the topic of the previously shown article. Approval of a therapy against…"	"blood cancer" / "skin cancer" / "lung cancer" / "bowel cancer" / "do not know"
Article awareness #2	"Please select for which system the approval is considered."	"basic health insurance" / "individual supplementary insurance" / "private hospitals" / "individual payment by patients" / "do not know"
Recognition costs	"The article described how much the personal insurance fee per year would increase with approval of the new therapy. Please select how much this was."	"10 francs per year" / "300 francs per year"
Recognition efficacy	"The article described the increased chance of recovery offered by the new therapy. Please select what the chance is for recovery offered by the therapy."	"ca. 30% chance of recovery" / "ca. 60% chance of recovery"
Perceived realism of costs	"How realistic do you rate that a new and more effective cancer therapy increases the personal insurance fee per year, as mentioned in the article?"	1 = "completely unrealistic" to 7 = "very realistic"
Perceived realism of efficacy	"How realistic do you rate that a new and more expensive cancer therapy increases the chance of recovery, as mentioned in the article?"	1 = "completely unrealistic" to 7 = "very realistic"
Perceived article direction	"Did the article rather support or oppose approval of the new therapy or was it rather balanced?"	-3 "strongly opposed" to 0 = "balanced" to 3 = "strongly supported" (rescaled as 1 to 7)
Perceived article frame	"Did the article rather emphasize the costs or the benefits of the new therapy or was it rather balanced?"	-3 "strongly emphasized the costs" to 0 = "balanced" to 3 = "strongly emphasized the benefits" (rescaled as 1 to 7)
Perceived article contextualization	"How much did the article contextualize approval of the new therapy within a bigger context?"	1 = "not contextualized at all" to 7 = "extensively contextualized"
Article evaluation (three items by Matthes & Schemer, 2012)	#1 "The article is professional" #2 "The article is coherent" #3 "The article is well written" #4 "The article is realistic" #5 "The article is credible" #6 "The article is comprehensible"	1 = "do not agree at all" to 7 = "completely agree," items rotated

Note. See https://doi.org/10.23662/FORS-DS-1013-1 for the original questionnaire

Control variables

This study also included numerous control variables for the purposes of data cleansing (see **Subchapter 4.3.3**), quota sampling (see **Subchapter 4.3.1**), or to later employ in the robustness checks of the hypotheses tests (see **Part V**). Three variables were used later for data cleansing (see **Table 19** for exact wording). First, the *device* participants used to access the online experiment was measured unobtrusively via a php code that collected this information when participants accessed the online questionnaire (for more information on why the experiment was conducted online, see **Subchapter 4.3.3**). Second, at the end of the questionnaire, a question asked participants whether they answered honestly during the interview or not (variable *seriousness*). Third, also at the end of the questionnaire, participants could leave a *comment* about the study.

To ensure correct quota sampling, three variables were employed (see **Table 19**). First, participants answered in which region of the German-speaking part of Switzerland they lived. If they did not live in 1 of the 19 German-speaking cantons, they received a screen out to ensure that only residents of German-speaking Switzerland were included in the sample (variable *region*). Second, *age* was measured in years on an open-ended question. Third, participants answered a single-choice question about their *sex*. Besides these demographic variables relevant for sampling, the study collected information on two further demographic variables (also, see **Table 19**). The first variable was *education* measured on a fully labeled ordinal scale and later dichotomized into low education below a high school degree or high education with at least a high school degree. The second variable was yearly gross *income*, again fully labeled but measured on a seven-point interval scale ranging from 1 = "less than CHF 25,000" to 7 = "more than CHF 150,000." Each scale point indicated an increase of CHF 25,000 (e.g., 2 = "between CHF 25,000 and CHF 49,999").

These demographic variables also served as control variables for the robustness checks for the hypotheses tests together with more substantial control variables concerned with the specific issue of the news article and variables typically used in persuasion and emphasis framing effects research to control for the stability of communicative effects. For instance, research on emphasis framing effects showed that high personal issue importance can inhibit framing effects (Lecheler et al., 2009). Given the issue used in the stimuli, one aspect of personal importance is, of course, whether participants are somewhat affected by cancer. Thus, three single-choice questions measured whether participants do suffer or have suffered from cancer or another serious illness themselves (variable *affectedness by serious illness – self*), whether they know someone in their close network who does or did so (variable *affectedness by serious illness – strong ties*), and whether they know someone from their distant network who suffers or did suffer from cancer (variable *affectedness by serious illness – weak ties*). The exact wording of these three variables is provided in the last rows of **Table 19**.

Table 19. Translated wording of all items for control variables (Part A)

(Latent) variable	Item wording	Answer format
Device	Device used by the participant to access the online questionnaire	unobtrusively via php
Seriousness	"As scientists, we rely on honest participation in surveys so that our data reflect what you actually think so as not to draw wrong conclusions from our study. If you are honest, can we use your answers with clear conscience?"	"no, better not" / "yes, I participated honestly"
Comment	"You have reached the end of the questionnaire. Below you can leave a comment about this study."	open answer
Region	"In which canton of German-speaking Switzerland do you live?"	selection of 1 of the 19 cantons / "I do not live in German-speaking Switzerland"
Age	"How old are you?"	open answer in years
Sex	"What is your sex?"	"female"/ "male"/ "prefer not to say"
Education	"What is the highest level of education diploma you obtained?"	"none" / "mandatory school" / "apprenticeship" / "high school" / "higher apprenticeship" / "professional school" / "college" / "university" / "prefer not to say"
Income	"What is your yearly gross income before taxes and social security fees?"	1 = "less than CHF 25,000" to 7 = "more than CHF 150,000" (each scale point indicates an increase of CHF 25,000) / "prefer not to say"
Affectedness by serious illness – self	"Do or have you suffered from cancer or another serious illness?"	"yes" / "no" / "prefer not to say"
Affectedness by serious illness – strong ties	"Do you know someone in your close network (e.g., friends or family) that did or does suffer from cancer or another serious illness?"	"yes" / "no" / "prefer not to say"
Affectedness by serious illness – weak ties	"Do you know someone in your distant network (e.g., acquaintance, neighbor, colleague) that did or does suffer from cancer or another serious illness?"	"yes" / "no" / "prefer not to say"

Note. See https://doi.org/10.23662/FORS-DS-1013-1 for the original questionnaire

Another relevant control variable in persuasion research is issue involvement (Petty & Cacioppo, 1979), i.e., participants' interest in the specific topic of the experiment. Thus, this variable was also measured in this study using a single item on a six-point scale on the interest in health insurances (variable *topic interest*). The item was hidden in a larger item battery asking about participants' interest in various health-related topics to maintain the realism of the cover story at the beginning of the questionnaire (see **Table 20**). Intentionally, the question broadly asked about health insurances, not directly about healthcare politics or insurance fees to avoid strong priming of the relevant issue prior to the stimulus (see **Subchapter 4.3.3** for why this was necessary).

Exclusively for the cover story, the questionnaire included another multiple-choice question asking participants to select from a list of media products concerned with health those they know (variable *media* see **Table 20**). The queried magazines and programs did not cover the question of healthcare politics. Thus, they were uninformative for the hypotheses, only included for distraction, and were not used in later data analyses.

As the issue under investigation is political, the study also included three political control variables (again, see **Table 20**). First, as outlined in **Subchapter 2.4.1**, political knowledge is among the variables most often investigated in research on emphasis framing effects (e.g., Chong & Druckman, 2007a; Druckman & Nelson, 2003; Lecheler & de Vreese, 2011, 2012, 2013; Nelson, Oxley et al., 1997; Slothuus, 2008; Slothuus & de Vreese, 2010). It has been shown to sometimes reinforce and other times mitigate the effectiveness of emphasis frames. Thus, it was important in this study to control for the influence of political knowledge. For this, participants had to rate how much they know about politics on a single item measured on a seven-point scale (variable *political knowledge*).

Second, participants' political leaning was measured on a left-right scale with 11 scale points, which is a typical measure in German-speaking countries to capture citizens' political ideology in a broad sense (Kroh, 2007). Including *political leaning* as a control variable has several advantages. It not only allows testing the convergent validity of the self-constructed measurement of participants' political value preferences (for the formal test, see **Subchapter 4.3.5**) but also enables a separate test of the influences of specific political values and the broader ideology of left and right (see **Part V**).

Third, participants rated how central their fundamental social welfare attitudes such as the previously probed political values were to them (variable *centrality of social welfare attitudes*). Some measures to assess value centrality exist in the literature. However, these measures only ask about one specific value (e.g., Verplanken & Holland, 2002). As this study included two competing values, four self-constructed items were used to measure participants' general centrality of superordinate social welfare attitudes, rather than measuring the centrality of single political values (see **Table 20**).

Table 20. Translated wording of all items for control variables (Part B)

(Latent) variable	Item wording	Answer format
Topic interest	"How interested are you in the following health topics?: Nutrition and diet, fitness and sports medicine, medical prevention and treatments, psychology and well-being, alternative medicine and homeopathy, health insurances"	1 = "not interested at all" to 6 = "very interested," items rotated
Media	"Here you see a list of media products concerned with health topics. Please choose all products you have heard of."	selection from a list of ten media products
Political knowledge	"How much do you know about politics?"	1 = "very little" to 7 = "very much"
Political leaning (Kroh, 2007)	"Many people use the terms 'left' and 'right' to classify differences in political attitudes. When you think of yourself, how would you classify your own attitude on a scale from left to right?"	1 = "left" to 11 = "right"
Centrality of social welfare attitudes	#1 "My political convictions regarding social welfare are markedly important to me" #2 "My basic attitudes on social welfare mean a lot to me" #3 "My views regarding social welfare are an essential aspect of my political opinion" #4 "My general notion of social welfare is of high importance for my worldview" # awareness check "Please check box number three to show that you read this question"	1 = "do not agree at all" to 6 = "completely agree," items rotated
Numeracy (subscale cognitive numeracy abilities by Fagerlin et al., 2007)	#1 "How good are you at working with fractions?" #2 "How good are you at working with percentages?" #3 "How good are you at calculating a 15% tip?" #4 "How good are you at figuring out how much a shirt will cost if it is 25% off?"	1 = "not good at all" to 7 = "very good," items rotated
Need for cognition (two items by Beißert, Köhler, Rempel, & Beierlein, 2014)	#1 "I like it when my life is full of tricky tasks that I have to solve" #2 "I find it particularly satisfying to finish an important task that required much thinking and intellectual effort" #3 "It is fun for me to find new solutions for problems" #4 "I like tasks that require much thinking and intellectual effort"	1 = "do not agree at all" to 6 = "completely agree," items rotated

Note. See https://doi.org/10.23662/FORS-DS-1013-1 for the original questionnaire

Table 21. Translated wording of all items for control variables (Part C)

(Latent) variable	Item wording	Answer format
Need for closure (Roets & van Hiel, 2011)	#1 "I don't like situations that are uncertain" #2 "I dislike questions which could be answered in many different ways" #3 "I find that a well ordered life with regular hours suits my temperament" #4 "I feel uncomfortable when I don't understand the reason why an event occurred in my life" #5 "I feel irritated when one person disagrees with what everyone else in a group believes" #6 "I don't like to go into a situation without knowing what I can expect from it" #7 "When I have made a decision, I feel relieved" #8 "When I am confronted with a problem, I'm dying to reach a solution very quickly" #9 "I would quickly become impatient and irritated if I would not find a solution to a problem immediately" #10 "I don't like to be with people who are capable of unexpected actions" #11 "I dislike it when a person's statement could mean many different things" #12 "I find that establishing a consistent routine enables me to enjoy life more" #13 "I enjoy having a clear and structured mode of life" #15 "I dislike unpredictable situations" # awareness check "Please check box number five to show that you read this question"	1 = "does not apply to me at all" to 6 = "fully applies to me," items rotated
Involvement in reading (items selected from the scale by J. C. Andrews & Shimp, 1990)	#1 "While reading, I was concentrated on the content" #2 "While reading, I was focused on the written text" #3 "I was reading attentively" #4 "I was reading carefully"	1 = "do not agree at all" to 7 = "completely agree," items rotated
Involvement in thinking	#1 "I made my own thoughts about the topic of the article while reading it" #2 "While reading, additional aspects regarding the topic came to mind" #3 "I thought about further things around the topic while reading" #4 "While reading more about the topic came to mind"	1 = "do not agree at all" to 7 = "completely agree," items rotated

Note. See https://doi.org/10.23662/FORS-DS-1013-1 for the original questionnaire

As the manipulation of issue-specific argument strength dealt with numbers (see **Subchapter 4.2.4**), the questionnaire contained a four-item measure to control for participants' *numeracy* (see **Table 20**) using the cognitive numeracy abilities subscale by Fagerlin et al. (2007). In addition, three further variables typically employed in persuasion research were measured: *Need for cognition*, a variable indicating how much people like to make cognitive efforts that can subsequently influence the effect of persuasive messages (Cacioppo & Petty, 1982), was collected using four items. Two items were taken from Beißert et al. (2014) to measure the subfactor joy in thinking. The other two items were self-constructed and also measured this subfactor. For *need for cognitive closure* (see **Table 21**), which indicates people's desire for obtaining (fast and easy) answers on topics (Webster & Kruglanski, 1994), the study employed the scale by Roets and van Hiel (2011).

Last, process involvement is a relevant aspect in persuasion research (J. C. Andrews, Durvasula, & Akhter, 1990). This construct differs from prior issue involvement (i.e., the variable of topic interest presented earlier) because it is more concerned with situational involvement in current message processing. In this study, the concept was divided into two subscales: First, *involvement in reading* the message was measured using four items from a longer scale by J. C. Andrews and Shimp (1990), and second, *involvement in thinking* about the topic was measured. This second variable was obtained using four self-constructed items (see **Table 21**).

Now that all measures employed in this study have been introduced, **Subchapter 4.3.3** explains how all the measures mentioned were implemented and arranged in the online questionnaire.

4.3.3 Procedure

Having described the measurements in **Subchapter 4.3.2**, this subchapter shows how the questions were implemented in an online questionnaire using the web tool by SoSci Survey. Furthermore, the order in which the questions were arranged to avoid order effects and inappropriate priming of relevant concepts prior to the stimulus, which could limit the validity of the online experiment, is justified.

Conducting the experiment online offered several advantages compared to laboratory experiments. First, administration and execution are less time consuming and require less economic resources (Berinsky, Huber, & Lenz, 2012). Second, it is easier to reach a diverse sample using online access panels from which participants can be directed to the online experiment (Berinsky et al., 2012). Third, respondents can participate in the study in their natural environment (e.g., at home) rather than in a lab, which can reduce the possible effects of having an investigator present that might treat participants differently (Rosenthal, 2004).

However, one potential disadvantage of online experiments compared to laboratory experiments is a lower degree of experimental control, as the investigator cannot directly observe how participants take part in the study (e.g., while listening to music, while brushing

teeth) and whether they participated seriously. The random assignment to experimental groups should ensure that such inattentive behaviors are at least equally distributed in all conditions and do not co-occur systematically with a specific treatment (see **Subchapter 4.2.1**). Still, this can add statistical noise to the data, leading to the risk that an online experiment cannot uncover meaningful relations between variables even if they would be there when respondents participate attentively (Berinsky, Margolis, & Sances, 2014). To avoid this problem while simultaneously benefiting from the advantages of online experiments, this study employed several actions to enable meaningful and transparent data cleansing, described at the end of this chapter. Before then, data collection and the order of the questions in the questionnaire are elaborated.

Data collection in two rounds

After receiving approval for this study from the ethical commission of the Faculty of Arts and Social Sciences at the University of Zurich (approval number 17.12.9), data was collected in two rounds from February 6 to February 20, 2018 using in both rounds exactly the same procedure explained later in this subchapter. The recruitment of participants was also exactly the same in both rounds, using the online access panel of Respondi AG with the quota-sampling described in **Subchapter 4.3.1**.

The first round collected n = 130 respondents who completed the questionnaire from February 6 to February 8. This round was simultaneously the final pretest of the effects of issue-specific argument strength, and participants were only (randomly) assigned to the two experimental conditions without salience emphasis frames: weak issue-specific argument strength without frames or strong thematic argument strength without frames. This was necessary to ensure that the chosen manipulation for argument strength produced significant attitudinal effects before running the entire experiment with all conditions, as this was the prerequisite for successful implementation of the design (see **Subchapter 4.2.2**). After data collection, the data of the first round were analyzed. They showed the desired effect of issue-specific argument strength in the baseline groups without frames. This enabled continuing with the second round of data collection without any adjustments to the experimental procedure.

The second round from February 13 to February 20 recruited n = 703 additional participants who finished the experiment. The only difference from round one was that round two randomly assigned participants to all six experimental groups, not only to the groups without salience emphasis frames. To ensure equally sized groups for all six conditions when summarizing the dataset of round one and round two, the randomization procedure in round two used a simple weighting factor to account for the fact that 130 participants were already randomly assigned to the groups without frames in the first round of data collection. Specifically, the probability that participants in round two would be randomly assigned to one of the conditions without frames was 50% lower than of being randomly assigned to one of the four other conditions with frames.

This led to fairly equally sized experimental groups after merging dataset one and dataset two to obtain the final dataset (N = 833). The merging of the datasets was possible because during the field time of two weeks, no relevant news events occurred that could have elicited different responses between the first and the second round of data collection. In addition, several statistical tests showed that the two datasets could be merged without concerns for internal validity (for the formal tests, see **Subchapter 4.4.1**). Thus, the two datasets are treated as one dataset throughout this book.

Order of questions in the questionnaire

Next, the procedure and order of questions, which were completely identical in both rounds of data collection, are explained. As mentioned, this study used the online access panel by Respondi AG to recruit participants (see **Subchapter 4.3.1**). Based on the pre-defined quotas for sex and age, Respondi AG invited respondents to participate in the study by sending them a link to the online experiment. If participants followed the link, they arrived at the first page of the online experiment (see **Table 22** for an overview of the order of all variables in the experiment). This page provided participants with basic information about the study, and introduced a cover story to deceive them about the actual goal of the research. Respondents read that the study was about "media and health," and that they were required to answer questions on this topic and evaluate a media piece on the issue of health.

In addition, the first page informed participants that they could not use their smartphone, but have to participate using a Mac, PC, or notebook. There were two reasons smartphones were not allowed. First, it enhanced somewhat control over the situation in which respondents participated in the study. Using a smartphone is possible nearly everywhere, which may motivate people to participate even in noisy situations such as on the metro or while waiting in a queue at the checkout counter. Using a Mac, PC, or notebook at least requires that people sit somewhere at a fixed location such as a desk at home. Second, not allowing smartphones ensured the readability of the online news article that served as the experimental stimulus by ensuring participants accessed the experiment via devices with bigger screens.

The next page asked respondents for their informed consent to participate in the study and informed them that the University of Zurich would store and analyze their data. The next page was not visible to participants, and measured unobtrusively the accessing *device* used by employing a simple php code provided by SoSci Survey. This was followed by a page asking participants about the three variables important for the quota sampling procedure (*age*, *sex*, and *residency*) described in **Subchapter 4.3.1**. Next, respondents answered questions on their formal *education* and their *income*. The following two pages were concerned with questions important in terms of maintaining the realism of the cover story.

Table 22. Order of variables in the questionnaire

Page	Variable
#1	Information about the study (topic "media and health", no access via smartphone)
#2	Informed consent for participation in the study and anonymous analysis of data
#3	Unobtrusive measure of CV accessing device
#4	Screen out if accessed via smartphone
#5	CV age, CV sex, CV region
#6	Screen out if quota full or not living in German-speaking Switzerland
#7	CV education, CV income
#8	CV topic interest and distraction
#9	Knowing media products for distraction and unobtrusive randomization to experimental group
#10-11	Announcement news article and unobtrusive filtering of correct article depending on experimental group
#12-23	Displaying news article stimulus depending on experimental group and screen out pages if time spent on stimulus page < 20 seconds
#24	TC article awareness #1 and #2
#25	DV issue attitude and screen out if article awareness #1 not correct
#26	DV paying intention
#27	DV attitude importance
#28	DV attitude certainty
#29	TC article evaluation
#30	Filtering order of mediators
#31	MED belief importance economic-individualism, MED belief content economic-individualism, MED belief evaluation economic-individualism (only groups with no frame or economic-individualism frame)
#32	MED belief importance humanitarianism, MED belief content humanitarianism, MED belief evaluation humanitarianism (only groups with no frame or economic-individualism frame)
#33	MED belief importance humanitarianism, MED belief content humanitarianism, MED belief evaluation humanitarianism (only groups with humanitarianism frame)
#34	MED belief importance economic-individualism, MED belief content economic-individualism, MED belief evaluation economic-individualism (only groups with humanitarianism frame)
#35	TC recognition costs, TC recognition efficacy, and screen out if instructed response item in scale belief evaluation humanitarianism was answered incorrectly
#36	TC perceived realism of costs, TC perceived realism of efficacy
#37	TC perceived article direction, TC perceived article frame, TC perceived article contextualization
#38	CV involvement in reading, CV involvement in thinking
#39	CV numeracy
#40	CV need for closure
#41	CV need for cognition and screen out if instructed response item in scale need for closure was answered incorrectly
#42	QF value preference for economic-individualism
#43	QF value preference for humanitarianism
#44	CV centrality of social welfare attitudes
#45	CV political leaning, CV political knowledge, and screen out if instructed response item in scale centrality of social welfare attitudes was answered incorrectly
#46	CV affectedness by serious illness – self, CV affectedness by serious illness – strong ties, CV affectedness by serious illness – weak ties
#47	CV comment
#48	CV seriousness
#49	Debriefing, contact information for further details, and screen out if seriousness was denied
#50	Redirect to online access panel provider

Note. CV = control variable, TC = treatment check variable, DV = dependent variable, MED = mediator variable, QF = quasi-factor, see https://doi.org/10.23662/FORS-DS-1013-1 for the original questionnaire in German

The first question asked participants about their interest in six different health topics. Among these issues was an item about health insurances, which was the control variable *topic interest*. Even though asking this item prior to the stimulus increased the risk of priming related thoughts before the stimulus, it had to be asked here. If the study measured topic interest after the stimulus, the measure could have been biased through exposure to the issue in the stimulus, which could even differ depending on the experimental condition. It can be speculated that topic interest increases more strongly in conditions with high issue-specific argument strength, because the amount of additional insurance fees makes the topic more relevant than the very low amount mentioned in the conditions with the weak argument. This would have made the variable useless as a control variable compared to asking it before the stimulus. To not prime the issue of health insurance too extensively, the item was hidden among the other items on health issues, and appeared as part of the broader cover story. To make the cover story more realistic, a second question followed asking respondents to select which health-related *media* products they already knew about.

The subsequent page announced that participants would see next an online news article about health on which they have to answer some questions afterward (again, see **Table 22**). Respondents were then randomly assigned to one of the six experimental conditions, and were exposed to the respective *stimulus* containing the factors of issue-specific argument strength and salience emphasis frames in the online news article. After reading the article, participants answered the two questions on the article's content to test their *awareness*. Given that these questions were asked directly after exposure to the stimulus, this was a rather easy task.

Next, the dependent variables were measured on respective single pages starting with *issue attitude* via *paying intention* to *attitude importance* and *attitude certainty*. On the following page, participants answered the first treatment check with the variable *article evaluation*. This variable was included here to not only measure the relevant treatment check but also to maintain the cover story of evaluating the media piece before reaching the following pages, which included measures for the mediator variables.

The order of the mediator variables depended on the experimental condition to avoid question effects on the salience of the frames, as these frames were mentioned in the questions on the mediators. Respondents in the conditions with the economic-individualism salience emphasis frame or without an explicit frame first answered questions on the mediators for economic-individualism (*belief content, belief importance, and belief evaluation of economic-individualism*) before they answered those on the mediators for humanitarianism (*belief content, belief importance, and belief evaluation of humanitarianism*) on the next page. In contrast, participants in the conditions with the humanitarianism frame first answered the mediators concerned with humanitarianism and on the following page, those on the mediators for economic-individualism. In so doing, the counter-frame to the frame displayed in the stimulus appeared last in the questions and could not bias the measurement of the mediators for the salience emphasis frame presented in the stimulus.

Subsequently, the questionnaire measured the treatment check variables (see **Table 22**). To ensure internal validity, this was the best position for asking these questions. Including the treatment check directly after the stimulus and before the dependent variables and mediators would have led to the problem of boosting the effects of the manipulations (Kidd, 1976). Participants' attention would be guided to the stimulus features of interest, making the manipulations more salient than they were in the stimulus. However, including treatment checks too late in the questionnaire could also be problematic, because remembering the stimulus correctly becomes more complicated over time and could be affected by other questions asked between the stimulus and the treatment check variables. Thus, the position of the treatment checks directly after the last variables that should be affected by the stimulus without additional biases through question effects (i.e., the mediator variables) seemed most appropriate.

First, participants answered questions about the exact amount of the increase in individual insurance fees and in efficacy due to the new therapy (*recognition costs* and *recognition efficacy*). Second, they rated the realism of both on the next page (*perceived realism of costs* and *perceived realism of efficacy*). Third, the questionnaire asked on a single page about participants' *perceived direction of the article*, the *perceived frame of the article*, and the perceived degree of *article contextualization*.

The last part of the questionnaire included the control variables and measurements for political value preferences (see **Table 22**). First, participants' *involvement in reading* and *thinking* about the news article was measured. On the next page, respondents answered questions about their *numeracy* followed by the measurements for *need for closure* and *need for cognition*. Then, the measurement for participants' political value preference followed in the order *value preference for economic-individualism* and on a subsequent page, *value preference for humanitarianism*.

Important was that questions on political value preferences were asked after the stimulus, not before. Asking about these variables before the stimulus would have primed participants' values through the questionnaire and thus, would have manipulated the cognitive accessibility of these values. This can alter respondents' processing of the stimulus (Blankenship & Wegener, 2011). That is, priming the values before would possibly confound the framing manipulation, as one would not be able to differentiate whether motivated reasoning was the result of the stimulus' salience emphasis frame highlighting the political value or of the earlier priming of values in the questionnaire. Thus, the measurement for value preferences was included after the stimulus.

However, this decision potentially increased another risk for internal validity. Political value preference served as a quasi-factor in the design, implying the necessity that the value preference is not affected by the manipulations of the stimulus (i.e., the independence of the moderator variable from the independent variables, see Baron & Kenny, 1986). However, even if the stimuli contained political values, it was rather unlikely that single exposure to these frames influenced participants' value preferences, because they are highly stable political-psychological traits (Feldman, 1988; Goren, 2005;

Jacoby, 2006), as discussed in **Subchapter 2.5.1**. Thus, the risk of affecting the quasi-factor value preference by asking about the variable after the stimulus was rather small, and a formal test showed that the quasi-factor was actually independent from the experimental manipulations (for further details, see **Subchapter 4.4.1**). This substantiates the decision to measure political value preference after the stimulus to avoid priming these values while simultaneously ensuring the independence of the quasi-experimental factor.

After the value preferences, the questionnaire moved to the political control variables *centrality of social welfare attitudes*, *political leaning*, and *political knowledge*. Again, these variables were measured after the stimulus to avoid priming respondents' political characteristics, which could foster motivated reasoning prior to the stimulus. The following page included the three control variables regarding participants' *affectedness by a serious illness*, after which respondents could leave a *comment* about the study and answered the last question about their *seriousness* in participating in the study.

Finally, the questionnaire ended with a debriefing about the real goals of the study, and participants were redirected to the online access panel provider. The average time taken to complete the experiment was M = 17.09 minutes (SD = 5.65 minutes, Mdn = 16.17 minutes). This time frame should be relatively unproblematic in terms of bringing about undesired response tendencies due to questionnaires that are too long (Herzog & Bachman, 1981).

Data cleansing

As for all surveys and online experiments, data cleansing was needed to filter out respondents who did not participate seriously. The literature suggests different approaches for data cleansing (Meade & Craig, 2012). Most of these have in common that the data is cleaned after data collection. The problem with such approaches is that the researcher has much freedom in deciding afterward which of the planned criteria for data cleansing are actually applied and to what extent. In addition, these criteria are rarely reported in scientific journals, rendering the process of data cleansing highly opaque and doubtful (Matthes et al., 2015).

Thus, a different approach was selected for this study, namely a-priori data cleansing directly during data collection without any additional influence of the researcher after the criteria were defined before the data were collected. For this, a set of criteria for attentive participation was defined. If a respondent did not meet any of the criteria during the interview, she or he was directly filtered out and could not finish the experiment. In contrast, everyone who met all the criteria and finished the experiment were included in the final dataset, and only this dataset was used for all analyses without any further data cleansing. In this way, the freedom of the researcher in data cleansing was completely restricted after defining a-priori the criteria for cleansing.

To measure the quality of respondents' participation correctly, it is important to use multiple indicators (Berinsky et al., 2014; Meade & Craig, 2012). In total, 13 criteria were used to exclude participants during data collection. Of these, six served to exclude

respondents who did not fit the predefined quotas for the sample, six were for screening out participants based on inattentive participation, and one used to exclude respondents using a smartphone as the access device (see **Table 23**). In total, 1,843 respondents started the survey.

If participants accessed the questionnaire via a smartphone, they received a message stating that they had done so, that this was not possible for the purposes of this study, and that they should access the link again via a Mac, PC, or notebook. These participants were then screened out of the questionnaire. This was rarely done (n = 22), because the online access panel provider already stated this information when inviting participants. In addition, Respondi AG invited only respondents in the relevant age group, namely those aged between 18 and 69 years living in the German-speaking part of Switzerland. However, some participants did not indicate their age (n = 3) or their sex (n = 7), were too old (n = 2), too young (n = 7), did not live in the German-speaking part of Switzerland (n = 56), or the quota for their sex and age group had already been fulfilled (n = 106). These respondents were directly screened out, could not move on with the questionnaire, and did not appear in the final dataset.

The first test of participants' attention during the experiment was the time they spent on the page with the online news article. As this was the experimental stimulus, it was important to ensure that respondents read the article and were exposed to the manipulations. To choose an appropriate time limit indicating that participants had read the stimulus, different people read the article during the conception of the study, indicating that one needed about 50 seconds to read the shorter stimuli of the condition without salience emphasis frames (i.e., with only the informational paragraph).

However, excluding everyone who needed less than 50 seconds would have implied that only those who carefully read the entire article would have been included in the final sample, while excluding people with lower involvement in the stimulus. Thus, this study chose a lower limit of 20 seconds for the time spent, expecting that this limit would be able to exclude people who did obviously not read the article, but without excluding those who only scanned it and had been at least somewhat exposed to the manipulations (for the stimulus see **Table 10** in **Subchapter 4.2.4**). That is, participants who spent less than 20 seconds on the stimulus page received a notification that the questionnaire was finished. Accordingly, their data were not included in the final dataset. Among the six tests for participation quality, the criterion of time spent led to the most exclusions from the experiment (n = 499).

Table 23. Dropouts by event in the questionnaire

Event	*n*	Completion rate
Interview started	1843	100%
Screen out smartphone	-22	98.8%
Screen out age missing	-3	98.6%
Screen out age below 18 years	-7	98.3%
Screen out age above 69 years	-2	98.2%
Screen out sex missing	-7	97.8%
Screen out residency not German-speaking Switzerland	-56	94.7%
Screen out quota full	-106	89.0%
Screen out time spent on stimulus < 20 seconds	-499	61.9%
Screen out wrong recognition of article topic	-109	56.0%
Screen out instructed response item #1	-95	50.8%
Screen out instructed response item #2	-6	50.5%
Screen out instructed response item #3	-4	50.3%
Screen out seriousness check	-6	50.0%
Exit during interview	-88	45.2%
Interview completed	833	45.2%

The second most exclusions based on the criteria for participation quality originated from incorrectly answering the question on the topic of the news article (variable article awareness #1), which was asked directly after the stimulus was displayed (n = 109). In addition, three instructed response items (e.g., "Please check box number five to show that you read this question") were hidden among longer item batteries. If respondents did not choose the instructed answer, they were also excluded (n = 105). The last criterion was participants' self-assessment of how seriously they participated in the study. If they said they did not answer seriously, they were excluded (n = 6).

Besides these criteria for exclusions during the interview, some respondents voluntary terminated their participation (n = 88). This left the study with the planned sample size of N = 833 completed questionnaires with acceptable participation quality. Given that 1,843 people started the questionnaire, the completion rate for this study was 45.2%. Unfortunately, Respondi AG could not provide the exact number of invitations sent out for the study, making it impossible to calculate the response rate. However, comparing the completion rate to other studies that used instructed response items, it is not unusual to lose around half the respondents. Usually, approximately one third to half the respondents of representative surveys fail to answer instructed response items correctly (Berinsky et al., 2014).

Having clarified how the final sample was reached, the questions respondents answered, and the order in which these questions appeared in the questionnaire, **Subchapter 4.3.4** now provides insights into the quality of the measurements employed.

4.3.4 Confirmatory factor analysis

As is typical in survey research, many measures in the study used several manifest items to correctly capture the underlying concept of a variable (Bollen, 2002; Bollen & Lennox, 1991). Thus, this subchapter presents the results of a simultaneous confirmatory factor analysis (CFA) to evaluate whether the political-psychological concepts were measured appropriately and could be summarized empirically as (reflective) latent variables, as intended before from a theoretical perspective.

The simultaneous CFA contained all variables described in **Subchapter 4.3.2** that consisted of more than a single item: issue attitude (3 items), attitude importance (3 items), attitude certainty (3 items), belief importance economic-individualism (3 items), belief content economic-individualism (3 items), belief evaluation economic-individualism (3 items), belief importance humanitarianism (3 items), belief content humanitarianism (3 items), belief evaluation humanitarianism (3 items), value preference for economic-individualism (4 items), value preference for humanitarianism (4 items), centrality of social welfare attitudes (4 items), need for cognitive closure (15 items), need for cognition (4 items), involvement reading (4 items), involvement thinking (4 items), numeracy (4 items), and article evaluation (6 items), totaling 76 items.

The simultaneous CFA tested in a reflective model whether the respective items could be explained by the respective underlying latent factor. The analysis did not allow for cross-loadings of items with a factor other than the one theoretically expected to ensure that the study measured distinct concepts (Brown, 2015, pp. 37–40). In addition, correlations between residuals were restricted for the same reason (Brown, 2015, pp. 157–162). However, correlations between latent factors were not restricted, because some underlying concepts are theoretically connected (e.g., someone with a higher need for cognition likely engages more in thinking about the topic of the news article). To estimate the CFA model without the statistical requirement of perfectly distributed variables, the robust maximum likelihood estimator (MLR) was used (Brown, 2015, pp. 62–65). The model was run in R using the *lavaan* package (Rosseel, 2012).

Table 24 summarizes the model fit information for the computed CFA model with all items. Most of the fit indices demonstrated good model fit: the robust comparative fit index (CFI) was > .95, the robust root mean square error of approximation (RMSEA) < .06, and the standardized root mean square residual (SRMR) was < .08 (for cut-off criteria, see Hu & Bentler, 1999). However, while the significance of the Chi-Square test is not a problem for the model as this test is highly sensitive to sample size and no longer considered a relevant cut-off criterion for the applied CFA (Brown, 2015, pp. 67–70; Hu & Bentler, 1999; West, Taylor, & Wu, 2012), the value of the Tucker-Lewis index (TLI) was slightly below the cut-off criterion of > .95, indicating improvements were needed for the measurement model.

A deeper analysis of the explained variance and factor loadings revealed that three out of the 15 items for need for cognitive closure had very low factor loadings and the latent factor could not explain them sufficiently (see **Table 25**). In addition, the first item for the variable "involvement in thinking" demonstrated much lower explained variance than the other items for this concept, as did one of the six items used to measure participants' article evaluation (item #6).

Table 24. Model fit information for the simultaneous confirmatory factor analysis of the measurement model using all measured items for variables with more than one item

Indicator	Value
Number of observations (*n*)	833
Minimum function test statistic (χ^2)	4676.12
Degrees of freedom (*df*)	2621
P-value of Chi-square test (*p*)	< .001
Robust Comparative Fit Index (CFI)	.953
Robust Tucker-Lewis Index (TLI)	.949
Robust Root Mean Square Error of Approximation (RMSEA)	.033
Standardized Root Mean Square Residual (SRMR)	.041

Note. Values are based on using the robust maximum likelihood (MLR) estimator, correlations between latent factors not restricted, $n = 833$

Table 25. Overview of problematic items in initial measurement model with all measured items

Item	R^2	*r*
Need for closure #7 ("When I have made a decision, I feel relieved")	.088	.296
Need for closure #8 ("When I am confronted with a problem, I'm dying to reach a solution very quickly")	.117	.341
Need for closure #14 ("I do not usually consult many different opinions before forming my own view")	.045	.211
Involvement in thinking #1 ("I made my own thoughts about the topic of the article")	.368	.607
Article evaluation item #6 ("The article is comprehensible")	.296	.544

Note. R^2 = variance in item explained by latent factor, *r* = standardized factor loading of item on latent factor, $n = 833$

Thus, a second and slightly adjusted simultaneous CFA was computed without these five of the initial 76 items. Except for the deletion of these items, the CFA was identical to the previous one. It again used the MLR estimator and did not restrict correlations between factors. It did again not allow for cross-loadings or residual correlations. **Table 26** shows that the previously problematic value for TLI increased to .960 and all other relevant model fit indices met the criteria for a valid CFA, even better than did the initial measurement model.

Table 26. Model fit information for simultaneous confirmatory factor analysis of final measurement model

Indicator	Value
Number of observations (*n*)	833
Minimum function test statistic (χ^2)	3822.41
Degrees of freedom (*df*)	2261
P-value of Chi-square test (*p*)	< .001
Robust Comparative Fit Index (CFI)	.963
Robust Tucker-Lewis Index (TLI)	.960
Robust Root Mean Square Error of Approximation (RMSEA)	.031
Standardized Root Mean Square Residual (SRMR)	.035

Note. Values are based on using the robust maximum likelihood (MLR) estimator, correlations between latent factors not restricted, five of 76 measured items excluded compared to initial measurement model (one of four items for article evaluation, one of four items for involvement in reflecting, three out 15 items for need for closure), $n = 833$

In addition, the latent factors significantly explained their respective items (all, $p < .001$) with high values for R^2 of between .48 and .95 (see **Table 27**). The only exception was need for cognitive closure, which had remarkably lower R^2 values between .21 and .64. However, this is still within an acceptable range, and the latent factor could significantly explain all items theoretically related to the factor. For reliability, the measurement model also showed satisfying results. Reliability ranged from $\alpha = .85$ for the variable value preference for economic-individualism to $\alpha = .97$ for the variable issue attitude (again, see **Table 27**).

Table 27. Reliability, factor loadings, and explained variance of final measurement model

Latent factor	Item	R^2	*r*	*p*
DV issue attitude (α = .97, ω = .97)	#1	.886	.941	< .001
	#2	.919	.959	< .001
	#3	.924	.961	< .001
DV attitude importance (α = .95, ω = .95)	#1	.824	.945	<.001
	#2	.730	.933	<.001
	#3	.874	.924	<.001
DV attitude certainty (α = .93, ω = .93)	#1	.893	.908	<.001
	#2	.871	.854	<.001
	#3	.853	.935	<.001
MED belief importance economic-individualism (α = .96, ω = .96)	#1	.817	.904	< .001
	#2	.900	.949	< .001
	#3	.938	.969	< .001
MED belief content economic-individualism (α = .94, ω = .94)	#1	.828	.910	<.001
	#2	.951	.975	<.001
	#3	.761	.873	<.001
MED belief evaluation economic-individualism (α = .95, ω = .95)	#1	.828	.910	<.001
	#2	.893	.945	<.001
	#3	.876	.936	<.001
MED belief importance humanitarianism (α = .89, ω = .89)	#1	.637	.798	< .001
	#2	.797	.893	< .001
	#3	.744	.862	< .001
MED belief content humanitarianism (α = .95, ω = .95)	#1	.836	.914	<.001
	#2	.923	.961	<.001
	#3	.834	.913	<.001
MED belief evaluation humanitarianism (α = .96, ω = .96)	#1	.889	.943	<.001
	#2	.926	.963	<.001
	#3	.861	.928	<.001
QF value preference for economic-individualism (α = .85, ω = .85)	#1	.712	.844	< .001
	#2	.589	.768	< .001
	#3	.502	.708	< .001
	#4	.554	.744	<.001
QF value preference for humanitarianism (α = .90, ω = .90)	#1	.704	.839	<.001
	#2	.735	.858	<.001
	#3	.627	.792	<.001
	#4	.680	.825	<.001
CV need for closure (α = .88, ω = .88)	#1	.626	.791	<.001
	#2	.287	.536	<.001
	#3	.378	.615	<.001
	#4	.323	.569	< .001
	#5	.213	.462	< .001
	#6	.616	.785	< .001
	#9	.207	.455	<.001
	#10	.385	.620	<.001
	#11	.223	.472	<.001
	#12	.397	.630	<.001
	#13	.405	.636	<.001
	#15	.640	.800	<.001
CV need for cognition (α = .85, ω = .86)	#1	.545	.738	< .001
	#2	.501	.708	< .001
	#3	.609	.781	< .001
	#4	.759	.871	<.001
CV involvement in reading (α = .93, ω = .94)	#1	.814	.902	<.001
	#2	.705	.840	<.001
	#3	.855	.925	<.001
	#4	.784	.886	<.001
CV involvement in thinking (α = .92, ω = .92)	#2	.771	.878	<.001
	#3	.851	.923	< .001
	#4	.788	.888	< .001
CV centrality of social welfare attitudes (α = .92, ω = .93)	#1	.816	.903	<.001
	#2	.804	.897	<.001
	#3	.706	.841	<.001
	#4	.697	.835	<.001
CV numeracy (α = .89, ω = .90)	#1	.643	.802	<.001
	#2	.803	.896	<.001
	#3	.575	.758	<.001
	#4	.701	.837	<.001
TC article evaluation (α = .88, ω = .88)	#1	.652	.807	<.001
	#2	.485	.696	<.001
	#3	.574	.758	<.001
	#4	.627	.792	<.001
	#5	.674	.821	<.001

Note. R^2 = variance in item explained by latent factor, *r* = standardized factor loading, DV = dependent variable, MED = mediator, QF = quasi-factor, CV = control variable, TC = treatment check variable, *n* = 833

Summary

Taken together, the final measurement model worked well in terms of psychometric criteria. This underlines that the chosen and partly self-constructed items reasonably measured the constructs of interest, which is an important prerequisite for testing the hypotheses. The good model fit also enabled using the latent variables rather than composite indices in all further analyses, which is done throughout this book if not stated differently. This is a strong advantage, as statistical estimates of significance and effect sizes are no longer biased through measurement error, as is the case for composite indices, because the measurement error of latent variables can be separated from multivariate statistical test estimates (Brown, 2015, pp. 42–46).

However, reliability is not the only criterion psychological measurements need to fulfill. Thus, the following subchapter (see **Subchapter 4.3.5**) examines the distribution of the variables and provides further checks of the validity of the obtained measures.

4.3.5 Descriptive statistics and median split

After presenting the measures of the study (see **Subchapter 4.3.2**), their order in the questionnaire (see **Subchapter 4.3.3**), and their factorial structure (see **Subchapter 4.3.4**), this subchapter reports the empirical univariate distribution of these measures on aggregate. This allows evaluating whether there is variance in the variables that can be explained by other variables, whether undesirable ceiling or floor effects exists, and to obtain further insights about the participants of the study. In addition, the subchapter describes the validity tests of the relevant measures for respondents' political value preference. Subsequently it shows how the quasi-experimental factor was computed based on this variable (see **Subchapter 4.2.2** and **Subchapter 4.2.4** for why political value preference for economic-individualism served as a two-level factor in the experiment).

Distribution of control variables and treatment check variables

Table 28 gives an overview of the distribution of all control variables and treatment check variables. In addition to the aforementioned demographic characteristics of the sample (see **Subchapter 4.3.1**), most people are (or were) not affected by a serious illness such as cancer (about 85%). Nevertheless, participants demonstrated somewhat high interest in the topic of health insurances and therefore, in the issue under investigation (M = 4.58, SD = 1.57 on a scale ranging from 1 to 6). This emphasizes that the topic selected for the experiment was – as expected (see **Subchapter 4.2.3**) – important to the participants and not an irrelevant side issue.

When examining the political control variables, this assessment is corroborated by the mean for participants' centrality of social welfare attitudes. The mean of the composite scale was noticeably above the midpoint of the original scale (M = 3.97, SD = 1.16 on a scale ranging from 1 to 6), indicating that not only was the specific issue important to the participants, but also their social welfare attitudes, from which the experiment derived

applicable salience emphasis frames employing political values. Alongside the mean for the originally measured scale for centrality of social welfare attitudes, **Table 28** provides the mean and standard deviation for the latent variable for the centrality of social welfare attitudes and for all other latent variables derived from the simultaneous confirmatory factor analysis (see **Subchapter 4.3.4**). As is evident, all latent variables are standardized and have a mean of zero with values in the minus range indicating values below the overall mean, and values in the plus range indicating values above the grand mean. Later, the hypotheses tests employed these latent variables based on their advantages in terms of measurement error, rather than composite indices (again, see **Subchapter 4.3.4**). However, for the presentation of the univariate statistics in this chapter, the composite indices are focused on because they enable better interpretation of absolute values.

With centrality of social welfare attitudes, the questionnaire included two further political control variables: political knowledge and political leaning. According to the mean of political knowledge ($M = 4.22$, $SD = 1.50$ on a scale ranging from 1 to 7), the sample on average had a medium awareness of politics, but with relatively high variance, which is likely also so in the population of all citizens.

In addition, participants' political leaning was distributed in a fairly balanced way with a mean close to the scale midpoint ($M = 5.98$, $SD = 2.33$ on a scale ranging from 1 to 11). This result supports the expectation articulated in **Subchapter 4.2.3** that an investigation of the issue of medical approvals with a sample of Swiss citizens has the advantage that political leaning and political value preferences are less skewed in the direction of "left" humanitarianism than in all other European countries.

Regarding the other control variables, **Table 28** highlights another important aspect: The slightly higher formal education of the sample (see **Subchapter 4.3.1**) seems to translate into more specific control variables such as numeracy, need for cognition, and the two measures for involvement with the online news article, as the mean values for these variables were considerably higher in the sample than the midpoint of the scales. However, this should not be considered a disadvantage for testing the hypotheses using this sample. In fact, the hypotheses are concerned with irrationality in attitude formation due to salience emphasis framing. If the study revealed the proposed effects among participants who are better educated, demonstrated a rather high need for cognition, and were involved in reading the stimulus and thinking about it – i.e., people who are in general more resistant to (non-substantive) persuasive attempts (Cacioppo, Petty, & Morris, 1983; Haugtvedt & Petty, 1992) – this would be a stronger indicator than finding the proposed salience frame effects with a more susceptible sample.

Table 28 also provides the univariate descriptive statistics for the treatment check variables. The formal test for the treatment checks are described later (see **Subchapter 4.4.2**); however, the table offers first insights. The substantial majority (more than 80%) of participants remembered correctly the manipulated costs and efficacy of the new therapy described in the stimuli, indicating that they recognized the manipulation of argument strength.

Table 28. Descriptive statistics on aggregate for all control variables and treatment check variables

Variable	Distribution of categories	*M*	*SD*	*n*
CV age		42.92	14.41	833
CV sex (0/1)	n_{women} = 420 (50.4%), n_{men} = 413 (49.6%)			833
CV education (0/1)	n_{low} = 390 (47.0%), n_{high} = 440 (53.0%)			830
CV income (1-7)		3.14	1.55	698
CV affectedness by serious illness – self (0/1)	n_{no} = 684 (84.8%), n_{yes} = 123 (15.2%)			807
CV affectedness by serious illness – strong ties (0/1)	n_{no} = 157 (19.2%), n_{yes} = 662 (80.8%)			819
CV affectedness by serious illness – weak ties (0/1)	n_{no} = 108 (13.2%), n_{yes} = 712 (86.8%)			820
CV topic interest (1-6)		4.58	1.57	833
CV political knowledge (1-7)		4.22	1.50	833
CV political leaning (1-11)		5.98	2.33	831
CV centrality of social welfare attitudes (latent)		0.00	1.15	833
CV centrality of social welfare attitudes (composite 1-6)		3.97	1.16	833
CV numeracy (latent)		0.00	1.25	833
CV numeracy (composite 1-7)		5.69	1.22	833
CV need for closure (latent)		0.00	1.01	833
CV need for closure (composite 1-6)		3.65	0.89	833
CV need for cognition (latent)		0.00	1.02	833
CV need for cognition (composite 1-7)		5.10	1.12	833
CV involvement in reading (latent)		0.00	0.98	833
CV involvement in reading (composite 1-7)		5.64	1.12	833
CV involvement in thinking (latent)		0.00	1.54	833
CV involvement in thinking (composite 1-7)		4.74	1.72	833
TC recognition costs (0/1)	$n_{incorrect}$ = 157 (18.8%), $n_{correct}$ = 676 (81.2%)			833
TC recognition efficacy (0/1)	$n_{incorrect}$ = 128 (15.4%), $n_{correct}$ = 705 (84.6%)			833
TC perceived realism of costs (1-7)		3.87	1.85	833
TC perceived realism of efficacy (1-7)		4.80	1.44	833
TC perceived article direction (1-7)		4.46	1.53	833
TC perceived article frame (1-7)		3.94	1.53	833
TC perceived article contextualization (1-7)		4.10	1.35	833
TC article evaluation (latent)		0.00	1.03	833
TC article evaluation (composite 1-7)		4.95	1.16	833

Note. CV = control variable, TC = treatment check variable, measurement scale in parentheses

Furthermore, participants' answers regarding the metric treatment check variables demonstrated rather high variance (*SD* between 1.35 and 1.85 on the various 7-point scales), which could be cautiously interpreted as a first sign that the different treatments led to different answers and thus, to this variance. The only treatment check variable that showed rather low variance was participants' evaluation of the article (*SD* = 1.16) with a mean of the composite index clearly above the midpoint of the scale (*M* = 4.95). However, this is also a rather good sign, because it is a first indicator that the different manipulations in the stimuli did not produce much variance, but that participants perceived all online news articles as rather credible.

Distribution of dependent variables, mediators, and value preference

Regarding the dependent variables and mediators, **Table 29** shows rather high variances for most variables. That is, something is occurring in the variables, which may be explained by the experimental manipulations. Unsurprisingly, the only variables with a standard deviation below 1.20 on the original six-point scales were the mediators for humanitarianism, for which the issue-specific argument strength was constant in all experimental conditions.

In terms of the means of the composite dependent variables, the average attitude in the sample was considerably skewed in the direction of supporting approval for the new cancer therapy (*M* = 4.28). However, there is still space at the end of the scale at 6, and the standard deviation was rather high (*SD* = 1.48). Thus, even though the variable is skewed, no clear ceiling effect exists.

Furthermore, **Table 29** shows the univariate distribution of participants' political value preference for economic-individualism and for humanitarianism. The composite indices display that the mean of both values was close to the scale midpoint ($M_{\text{economic-individualism}}$ = 3.73, $M_{\text{humanitarianism}}$ = 3.74, on a scale ranging from 1 to 6). Again, this highlights that the selected topic and salience emphasis frames for the experiment were a good choice, because the balanced distribution allows for a meaningful median split of the quasi-factor political value preference for economic-individualism.

Table 29. Descriptive statistics on aggregate for all dependent variables, quasi-factors, and mediators

Variable	*M*	*SD*	*n*
DV attitude (latent)	0.00	1.45	833
DV attitude (composite 1-6)	4.28	1.48	833
DV attitude importance (latent)	0.00	1.24	833
DV attitude importance (composite 1-6)	4.24	1.27	833
DV attitude certainty (latent)	0.00	1.15	833
DV attitude certainty (composite 1-6)	3.76	1.25	833
DV paying intention	224.00	738.82	825
MED belief importance economic-individualism (latent)	0.00	1.43	833
MED belief importance economic-individualism (composite 1-6)	3.54	1.52	833
MED belief content economic-individualism (latent)	0.00	1.15	833
MED belief content economic-individualism (composite 1-6)	4.61	1.21	833
MED belief evaluation economic-individualism (latent)	0.00	1.45	833
MED belief evaluation economic-individualism (composite 1-6)	3.05	1.54	833
MED belief importance humanitarianism (latent)	0.00	0.79	833
MED belief importance humanitarianism (composite 1-6)	4.94	0.96	833
MED belief content humanitarianism (latent)	0.00	1.06	833
MED belief content humanitarianism (composite 1-6)	3.73	1.16	833
MED belief evaluation humanitarianism (latent)	0.00	1.29	833
MED belief evaluation humanitarianism (composite 1-6)	4.28	1.32	833
QF value preference for economic-individualism (latent)	0.00	1.10	833
QF value preference for economic-individualism (composite 1-6)	3.73	1.13	833
QF value preference for humanitarianism (latent)	0.00	1.07	833
QF value preference for humanitarianism (composite 1-6)	3.74	1.16	833

Note. DV = dependent variable, MED = mediator, QF = quasi-factor, measurement scale in parentheses

Validity of measurement of political value preference and median split

To assess whether the measure for citizens' political value preference for economic-individualism not only fulfilled the psychometric criteria but also demonstrated high construct validity, its convergent validity with two other political variables was examined. As explained, adhering to the value of economic-individualism is part of the market-oriented ideology of "right" social welfare attitudes (see **Subchapter 4.2.3**). Thus, if the value preference was measured correctly, it should positively correlate with the control variable political leaning, which measured participants' self-identification on a political left-right scale.

Table 30 shows that this was the case with a significant ($p < .001$) correlation of $r = .46$. In addition, if the political values economic-individualism and humanitarianism are competing ends of a political value conflict, as noted in **Subchapter 4.2.3**, then these values should correlate negatively with each other, meaning that being in favor of one value goes alongside opposing the other value. **Table 30** reveals a significant ($p < .001$) negative

correlation between the two values of r = -.56, indicating again that the employed measure well captured the underlying concept of citizens' political value preference for economic-individualism.

Table 30. Convergent validity of measure for value preference for economic-individualism

	Value preference for economic-individualism					
Variable	*t*	*df*	*r*	95% CI	*p*	*n*
Value preference for humanitarianism	-19.55	831	-.56	[-.61, -.51]	< .001***	833
Political leaning	14.90	829	.46	[.40, .51]	< .001***	831

Note. CI = 95% confidence interval for Pearson's *r*, *** $p < .001$

To obtain the necessary two-level quasi-experimental factor for value preference for economic-individualism, which allows testing the hypotheses concerned with value resonance (see **Part III** and **Subchapter 4.2.4**), the sample was split into two subgroups based on the median of the latent variable. As **Table 31** shows, the median was Mdn = .01, equating to about 3.74 on the composite index. As such, the median was relatively close to the midpoint of the scale of 3.5 and thus, is a theoretically meaningful value by which to divide the sample.

All participants with values not higher than the median were assigned as having a low preference for economic-individualism. This was the case for half the sample (n = 416, 49.9%). In contrast, the other half were respondents with values higher than the median, who were assigned to the second level of the quasi-factor, i.e., treated as having a high preference for economic-individualism (n = 417, 50.1%).

Table 31. Median split of value preference for economic-individualism for quasi-experimental factor

Value preference for economic-individualism	*Mdn*	*M*	*SD*	*n*
Low preference for economic-individualism	-0.74	-.89	0.68	416 (49.9%)
High preference for economic-individualism	0.78	.89	0.78	417 (50.1%)
Overall	0.01	0.00	1.10	833 (100%)

Of course, within each subgroup is still some variation in how strongly each respondent supports or opposes the value of economic-individualism. However, the standard deviation in the subgroups is not that high with SD_{low} = 0.68 and SD_{high} = 0.78. Furthermore, the means of the subgroups differ from each other in the range of nearly two

standard deviations (see **Table 31**). That is, both groups demonstrate a very different preference for economic-individualism. Nevertheless, hypotheses tests described in the results section later not only included the median split variable but also robustness checks with the metric latent variable of economic-individualism (see **Subchapter 5.1.6**). This allowed an even more fine-grained investigation of the influence of this variable.

Correlations between mediators

The last table in this subchapter (see **Table 32**) is concerned with the question of how strongly the mediators of interest correlate with each other. This is necessary to ensure that these important variables were not only different latent factors according to the confirmatory factor analysis (see **Subchapter 4.3.4**), but also statistically differed enough from each other to ensure no problem of multicollinearity when analyzing the different mediators simultaneously in a mediation model.

While belief importance and belief content correlated only modestly ($r = .38$, $p < .001$), belief evaluation correlated rather strongly with belief importance ($r = .67$, $p < .001$) and belief content ($r = .56$, $p < .001$). However, even high correlations between multiple mediators are not a statistical problem in a mediation analysis, as long as multicollinearity is not too high (Hayes, 2018, pp. 183–186).

The variance inflation factor (VIF) when predicting issue attitude in a regression of all three mediators simultaneously ranged between 1.47 and 2.28, which is clearly below the critical value of 10 (Miles, 2005). Thus the three mediators can later be examined simultaneously without strong concerns about multicollinearity (see **Chapter 5.2**).

Table 32. Bivariate correlations between mediators

	Belief content economic-individualism (n = 833)	Belief evaluation economic-individualism (n = 833)
Belief importance economic-individualism (n = 833)		
Pearson's r	.38	.67
95% Confidence interval	[.32, .44]	[.63, .70]
p-value	< .001***	< .001***
Belief content economic-individualism (n = 833)		
Pearson's r		.56
95% Confidence interval		[.52, .61]
p-value		< .001***

Note. *** $p < .001$

Summary

The last subchapters showed how this study measured the variables of interest (see **Subchapter 4.3.2** and **Subchapter 4.3.3**), confirming the success thereof in terms of psychometric criteria (see **Subchapter 4.3.4**) and regarding the distribution of variables (this subchapter). However, the construct validity of the measures is only one aspect of an experiment's validity to enable the generalization of its findings (Shadish et al., 2002, pp. 64–68). The second relevant aspect is internal validity, i.e., whether the experiment appropriately tested causality and whether competing explanations for possible effects can be ruled out (Shadish et al., 2002, pp. 53–63). Thus, the next subchapters discuss several formal tests to assess the internal validity of this experiment starting with the test for successful randomization (see **Subchapter 4.4.1**).

4.4 Tests of experimental validity

4.4.1 Randomization checks

The core advantage of an experiment in analyzing the causality proposed in the hypotheses (see **Part III**) is the principle of randomization, through which known and unknown variables can be ruled out as competing explanations for differences between treatment groups (Gravetter & Forzano, 2018, pp. 164–174). However, first, this is a theoretical advantage that must translate into a specific experiment where empirical problems such as attrition can endanger the balanced distribution of confounding third variables in the treatment conditions and thus, threaten internal validity (Shadish et al., 2002, pp. 53–63). Therefore, this subchapter describes some formal tests of whether randomized assignment to the treatment groups of the experiment was unbiased and successful.

Attrition by randomized group assignment

The term attrition refers to the problem that the loss of participants during an experiment can be systematically related to their random assignment to a specific treatment condition (Shadish et al., 2002, pp. 323–324). If one (or more) treatment(s) lead(s) to more dropouts than other treatments, and participants who drop out are a systematic group, then the experimental conditions not only differ regarding the treatment but also regarding the variables that caused the dropout as well as all variables related to this causing variable. Thus, the aforementioned advantage of randomization before the treatment can get lost, as some variables are no longer equally distributed in all conditions in addition to the treatment, meaning that variables other than the treatment may explain the outcome differences between experimental conditions.

For example, in a short thought experiment, it could be considered that the conditions with salience emphasis frames would generate more boredom than the conditions without frames, because the stimuli with frames are longer than the stimuli without frames, which contained only the informational paragraph with the factor issue-

specific argument strength. Then, this boredom would provoke more dropouts in the framing conditions than in the conditions without frames, because some people do not like to expose themselves to boring news and would no longer participate in the experiment. This would imply that fewer respondents with low tolerance for boredom remain in the groups with salience emphasis frames, whereas the groups without frames will still consist of participants with a higher and lower tolerance for boredom. Possibly, tolerance for boredom is related to other personal characteristics such as need for cognition and thus, fewer people with a high need for cognition will remain in the groups with frames than in the groups without frames. Next, a high need for cognition could reduce susceptibility to salience emphasis framing effects, but enhance the effects of issue-specific argument strength. If the results of a comparison of treatment conditions then indicate that the framing conditions exerted strong effects, which suppressed the effect of issue-specific argument strength that simultaneously persisted in the conditions without frames, it could be incorrectly concluded that exposure to salience emphasis frames was responsible for the lower effect of issue-specific argument strength when not considering attrition.

In contrast, when considering the problem of attrition, it could be correctly concluded that it was not the salience emphasis frames that caused the effects, but perhaps the need for cognition, which varied with the treatment conditions in a way that a lower need for cognition in the framing conditions decreased the effects of issue-specific argument strength. However, it would not be certain which of the two variables, the treatment or need for cognition, was responsible for the effect. Moreover, a third unmeasured and thus unknown variable could be responsible for the effect, rendering the experimental results highly uncertain. Hopefully, this small example has illustrated how attrition can lead to very poor internal validity for the results of an experiment and why it is important to check for attrition when testing internal validity.

Leaving the thought experiment and returning to the real experiment in this study, **Table 33** reports a formal test on whether the dropout rate during the experiment was the same in all experimental conditions. As seen, the completion rate after group assignment was fairly similar, ranging between 47.5% and 56.3% in the respective groups. A Chi-squared-test revealed no significant systematic relation between dropouts and the assignment to a specific group ($p = .139$). That is, no treatment condition had a significantly higher dropout rate than other conditions.

Table 33. Dropouts by experimental group

	Experimental group						
Completion	Weak argument + no frame	Strong argument + no frame	Weak argument + frame economic-individualism	Strong argument + frame economic-individualism	Weak argument + frame humani-tarianism	Strong argument + frame humani-tarianism	Sum
Not completed	112 (44.1%)	111 (43.7%)	144 (52.2%)	130 (46.9%)	146 (52.5%)	140 (50.5%)	783 (48.5%)
Completed	142 (55.9%)	143 (56.3%)	132 (47.8%)	147 (53.1%)	132 (47.5%)	137 (49.5%)	833 (51.5%)
Sum	254	254	276	277	278	277	1616

Note. Displayed is *n* with percentages in parentheses, $\chi^2(df = 5) = 8.338$, $p = .139$. Cramer's $V = .07$, *n* is lower than the number of started questionnaires because 227 cases left the questionnaire before being assigned to the experimental groups on questionnaire page #9 (see **Table 22** and **Table 23** in **Subchapter 4.3.3**)

Randomization of control variables and value preference

Even though attrition was balanced in all experimental groups, there was a noticeable number of losses during the experiment, mostly because of the data cleansing procedure that prevented respondents with low participation quality from completing the study, (see **Subchapter 4.3.3**). Therefore, it is theoretically possible that participants with different characteristics got lost in the different groups, despite that the number of losses was the same in all groups.

Thus, **Table 34** reports several tests on whether the measured control variables were equally distributed in the six experimental groups. The tests treated the experimental conditions as independent variables and the control variables as dependent variables to check whether belonging to a specific treatment condition explained the distribution of control variables. This would imply a systematic relation between the treatment groups and the control variables. According to the level of measurement, the analyses used Chi-squared-tests for categorical control variables and one-way ANOVAs for metric variables.

As shown, the experimental groups did not explain any of the measured control variables with all *p*-values far from being statistically significant, even though the *n* of the analyses and thus, its statistical power to detect differences was rather high. That is, the theoretical advantage of randomization translated to the specific experiment in this study, implying rather strong internal validity for testing the hypotheses. Of course, it is not completely certain whether this also holds true for all other unknown variables that were not measured. However, given that attrition and all measured control variables were equally

distributed in all six experimental groups, the probability is rather high that the randomization procedure also led to equal distributions of non-measured third variables.

Table 34. Test of successful randomization of control variables in experimental groups and test of independence of quasi-factor political value preference

Variable	*F*	χ^2	*df*	*n*	*p*
CV age	0.28		5, 827	833	0.926
CV sex (0/1)		4.73	5	833	0.450
CV education (0/1)		7.02	5	830	0.219
CV income	0.46		5, 692	698	0.803
CV affectedness by serious illness – self (0/1)		7.53	5	807	0.184
CV affectedness by serious illness – strong ties (0/1)		6.94	5	819	0.225
CV affectedness by serious illness – weak ties (0/1)		4.08	5	820	0.539
CV topic interest	0.28		5, 827	833	0.926
CV political knowledge	0.78		5, 827	833	0.566
CV political leaning	0.92		5, 827	831	0.470
CV centrality of social welfare attitudes	0.35		5, 827	833	0.885
CV numeracy	0.37		5, 827	833	0.870
CV need for closure	1.28		5, 827	833	0.271
CV need for cognition	0.40		5, 827	833	0.846
CV involvement in reading	1.55		5, 827	833	0.173
CV involvement in thinking	1.18		5, 827	833	0.317
QF value preference for humanitarianism	0.22		5, 827	833	0.955
QF value preference for economic-individualism	1.77		5, 827	833	0.117
QF value preference for economic-individualism (0/1)		9.75	5	833	0.083

Note. CV = control variable, QF = quasi-factor, one-way ANOVAs performed for metric variables and χ_2-tests for categorical variables

Alongside the distribution of control variables, **Table 34** also shows that this study achieved another important aspect of internal validity. The last two rows show the relation between respondents' political value preferences and the experimental conditions. As explained, the preference for economic-individualism served as a quasi-experimental factor in the experiment (see **Subchapter 4.2.2** and **Subchapter 4.2.4**). Statistically, a quasi-factor is a non-manipulated moderator variable that can alter the relation between the independent and dependent variable. However, a moderator is only a valid predictor if this variable is independent of the other independent variable(s), i.e., when the moderator is not confounded with the other factor(s) whose influence(s) the moderator is expected to condition (Baron & Kenny, 1986).

The last two rows in **Table 34** indicate that participants' political value preference for economic-individualism was independent of the six experimental conditions when considering both the metric latent variable ($p = .117$) and the categorical variable based on

the median split (p = .083). That is, the categorical preference for economic-individualism is a valid quasi-experimental factor in the employed design.

Merging of datasets

A last relevant aspect of randomization is the merging of the two datasets obtained in the two rounds of data collection (see **Subchapter 4.3.3**). As explained, randomized assignment to the experimental groups in the first round of data collection only took place for the two groups without frames, whereas participants were assigned to all six experimental groups in round two with a weighting factor that accounted for the fact that some people were already assigned to the two groups without frames in round one. This procedure does not per se limit the possibility of correctly randomized group assignments for the merged dataset consisting of both rounds when two criteria are met.

First, group assignment should not only be randomized in each round of data collection, but whether participants took part in the first or second round of data collection should also be randomized. Moreover, these participants should be selected from the same pool of potential participants. In this case, the probability that an individual participant will be in one of the six experimental groups is the same prior to the experiment, regardless of whether the data of this person were collected in round one or round two. The procedure employed in this study met this criterion by sampling the participants for both rounds using exactly the same quota-sampling procedure to sample participants from the online access panel by Respondi AG (see **Subchapter 4.3.3**).

Second, even though the chances for an individual respondent were the same for being assigned to one of the six experimental groups, expecting no differences between dataset one and dataset two for the groups without frames is only internally valid when there is no unknown effect of an extraneous event that may have happened in the four days between the end of phase one and the beginning of phase two of data collection (i.e., a history effect, see Shadish et al., 2002, p. 56). If such event effect exists, merging the datasets would be invalid, because the treatment effects for the groups without frames would not only be the result of the treatment but also of a confounding unknown event.

Given that this study collected data on an equal number of participants for the two groups without frames in both rounds of data collection, and that in both rounds assignment to these groups was random, the effects of external events that could have biased the results between the two rounds of data collection can be tested. The varying factor in the groups without frames was issue-specific argument strength against approval. If the effect of this variable was affected by an external event between the two phases of data collection, an interaction effect between issue-specific argument strength and the dataset variable (indicating whether the effect of issue-specific argument strength was tested in round one or round two) should be found when analyzing the groups without frames.

Table 35 summarizes the results of this possible interaction effect on all measured dependent variables, mediators, and treatment check variables. No significant interaction effect was found, implying that no unexpected external event influenced the treatment

effects. That is, data collection in the two rounds and the subsequent merging of datasets did not threaten the internal validity of the experiment.

Table 35. Test of interactions between issue-specific argument strength and dataset in groups without frames

Variable	*F*	χ^2	*df*	*n*	*p*
DV issue attitude	0.90		1, 281	285	0.344
DV attitude importance	0.26		1, 281	285	0.608
DV attitude certainty	1.51		1, 281	285	0.221
DV paying intention	0.27		1, 279	283	0.604
MED belief importance economic-individualism	0.24		1, 281	285	0.628
MED belief content economic-individualism	0.03		1, 281	285	0.861
MED belief evaluation economic-individualism	0.04		1, 281	285	0.837
MED belief importance humanitarianism	0.04		1, 281	285	0.853
MED belief content humanitarianism	0.01		1, 281	285	0.915
MED belief evaluation humanitarianism	0.07		1, 281	285	0.787
TC recognition costs		3.37	4	285	0.498
TC recognition efficacy		3.26	4	285	0.515
TC perceived realism of costs	0.04		1, 281	285	0.846
TC perceived realism of efficacy	0.30		1, 281	285	0.582
TC perceived article direction	0.32		1, 281	285	0.570
TC perceived article frame	0.55		1, 281	285	0.460
TC perceived article contextualization	0.82		1, 281	285	0.367
TC article evaluation	1.08		1, 281	285	0.300

Note. Displayed are the values for the interaction between issue-specific argument strength (only groups without frames) and the dataset variable on dependent variables (DV), mediators (MED), and treatment check variables (TC), two-way ANOVAs performed for metric variables and χ^2-tests for categorical variables

Summary

This subchapter showed that the randomization procedure was successful, which is an important prerequisite for the internal validity of this experiment. However, an experiment's validity not only depends on randomization and the control over variables that could be confounded with the treatment conditions. It also depends on whether the experimental treatments themselves correctly manipulated the constructs of interest without unintentionally adding confounding variables to the treatments (Shadish et al., 2002, pp. 64–82). Thus, **Subchapter 4.4.2** elaborates on whether participants perceived the treatments as intended.

4.4.2 Treatment checks

The construct validity of an experimental treatment depends on whether the employed manipulations actually manipulated the independent variables of interest without simultaneously adding any confounding variables to the experimental treatment (Shadish et al., 2002, pp. 64–82). To ensure this, manipulation checks can be a helpful tool (Kidd, 1976). Unfortunately, the literature provides an equivocal understanding of what a manipulation check should measure and when it should be employed (O'Keefe, 2003; Sigall & Mills, 1998).

For example, O'Keefe (2003) argues that "message manipulation checks" that test whether participants perceive message properties (e.g., showing a layperson or an expert as the speaker of a statement) are unnecessary, because these properties should be independent of respondents' perceptions. Instead, he proposed that only manipulation checks of psychological states (e.g., feeling well informed) or mediator variables (e.g., attributing higher credibility to the message from the expert than from the amateur) triggered by these properties are necessary in addition to analyzing the outcome effect (e.g., stronger persuasion when an expert is speaking).

For this study, however, there is a good reason to test whether participants noticed the manipulated message properties. When dealing with a rather elusive concept such as emphasis frames (see **Chapter 2.1**), it is not sufficient that the researcher had the feeling to manipulate message properties as salience emphasis frames in a discernible way, but it must be also ensured that the participants themselves perceived the manipulated cross-thematic frames and issue-specific arguments as intended without directly examining mediating psychological states (e.g., respondents' interpretation of the issue under the displayed frame) or outcomes (e.g., issue attitude). That is, "message manipulation checks" – better known as treatment checks that measure whether treatments are noticed (Sigall & Mills, 1998; Trepte & Wirth, 2004) – are useful in this study alongside manipulation checks, which already look at the effects of message properties (see **Subchapter 4.4.3** for formal manipulation checks).

In addition, it is important that treatment checks reveal aspects that should vary according to the experimental condition (e.g., noticing different salience emphasis frames according to the framing conditions). Similarly, it is necessary to test for aspects that should not differ between experimental conditions to rule out confounding variables that might co-vary with manipulated message properties (e.g., all stimuli are likewise credible regardless of the framing condition).

Recognition and perceived realism of the manipulation of issue-specific argument strength

The first relevant aspect of the treatment checks is whether participants recognized the manipulation of issue-specific argument strength, which comprised of two aspects: the amount of increase in personal health insurance fees (CHF 10 or CHF 300) and the increased chance of recovery (constantly 30%) through approval of the new therapy. For

both aspects, participants had to select the correct amount shown in the stimulus with two single-choice questions (variables *recognition costs* and *recognition efficacy*, see **Subchapter 4.3.2**).

The aim of these questions was first that the majority of participants recognized the issue-specific arguments correctly to be certain that the thematic information could have an effect at all. Second, the aim was that the correct recognition of the arguments did not differ between experimental groups and the strong issue-specific argument was not more easily recognized than the weak one. This would then be a possible competing explanation for the effects of thematic arguments that must be ruled out.

Table 36. Distribution of recognizing correctly the costs of the therapy (i.e., varying issue-specific argument strength against approval) by experimental group

	Experimental group						
Answer	Weak argument + no frame	Strong argument + no frame	Weak argument + frame economic-individualism	Strong argument + frame economic-individualism	Weak argument + frame humani-tarianism	Strong argument + frame humani-tarianism	Sum
Wrong	26 (18.3%)	18 (12.6%)	39 (29.5%)	22 (15.0%)	26 (19.7%)	26 (19.0%)	157 (18.8%)
Correct	116 (81.7%)	125 (87.4%)	93 (70.5%)	125 (85.0%)	106 (80.3%)	111 (81.0%)	676 (81.2%)
Sum	142	143	132	147	132	137	833

Note. Displayed is *n* with percentages in parentheses, $\chi^2(df = 5) = 15.079$, $p = .010$. Cramer's $V = .13$

Table 36 shows the distribution of participants' correct and incorrect recognition of the mentioned amount of additional costs for all experimental groups separately and on aggregate. Across all groups, a vast majority of 81.2% of the respondents remembered the costs correctly, implying that the manipulation of issue-specific argument strength against approval was sufficiently recognized. However, testing for a balanced distribution between experimental groups, a Chi-squared-test revealed that the recognition rate differed slightly (Cramer's $V = .13$) but significantly ($p = .010$) between groups.

While five out of the six experimental groups demonstrated a similar recognition rate, varying between 80.3% and 87.4%, the group with the weak issue-specific argument against approval and an economic-individualism frame had a lower recognition rate of 70.5%. Still, as the vast majority of the group provided a correct answer, it can be concluded that the manipulation was also recognized in this group. In addition, in all other conditions dealing with the weak cost argument, a lower recognition rate than in the groups with the

strong cost argument was not evident. Thus, it is unlikely that the weak issue-specific argument itself was responsible for the lower recognition rate.

Instead, the most reasonable explanation is that the salience emphasis frame economic-individualism led to a lower recognition rate. Remembering the costs wrongly in this condition means that participants chose the high amount of costs (CHF 300) and not the correct low amount (CHF 10). In other words, the frame economic-individualism led to an overestimation of the costs brought about by the new therapy, which is a first indicator that the frame enhanced the perceived argument strength of the weak argument against approval.

This would be aligned with H5 and H6, which proposed that frames alter the effects of argument strength and are tested more exhaustively later (see **Part V**). For the treatment check thus far, it can be concluded that participants mainly recognized the manipulation of issue-specific argument strength against approval, which is the first prerequisite for a valid hypotheses test.

This is also true when examining the recognition rate for the issue-specific argument concerned with the increased chance of recovery through the new therapy (i.e., the constant strong issue-specific argument in favor of approval). **Table 37** shows that 84.6% of respondents remembered the chance of recovery correctly, which is the vast majority and similar to the overall recognition rate for the cost argument. In addition, no significant differences were found between experimental groups (p = .692), meaning that the requirement that most participants recognized the issue-specific argument of efficacy in the informational part was fulfilled.

Table 37. Distribution of recognizing correctly the efficacy of the therapy (i.e., constant issue-specific argument strength in favor of approval) by experimental group

	Experimental group						
Answer	Weak argument + no frame	Strong argument + no frame	Weak argument + frame economic-individualism	Strong argument + frame economic-individualism	Weak argument + frame humani-tarianism	Strong argument + frame humani-tarianism	Sum
Wrong	19 (13.4%)	18 (12.6%)	24 (18.1%)	25 (17.0%)	23 (17.4%)	19 (13.9%)	128 (15.4%)
Correct	123 (86.6%)	125 (87.4%)	108 (81.8%)	122 (83.0%)	109 (82.6%)	118 (86.1%)	705 (84.6%)
Sum	142	143	132	147	132	137	833

Note. Displayed is n with percentages in parentheses, $\chi^2(df = 5) = 3.055$, $p = .692$. Cramer's $V = .06$

Subchapter 4.2.4 already discussed the realism of the chosen arguments for the manipulation of argument strength, indicating in particular that the price for new cancer therapies and the additional costs brought about by an approval thereof are in the range of the real expenses of the Swiss basic health insurance and personal insurance fees. Still, as participants are not experts in this field, they could perceive the chosen issue-specific arguments as unrealistic. Thus, two treatment check variables tested the perceived realism of the varying cost argument and the argument concerned with the efficacy of the new therapy (variables *perceived realism of costs* and *perceived realism of efficacy*, see **Subchapter 4.3.2**).

To ensure that the manipulation of issue-specific argument strength was not confounded by different degrees of realism, first, the weak and the strong cost argument should not differ. Second, the perception of the realism of the constant argument for efficacy should not vary when accompanied with different cost arguments. Third, the level of perceived realism should be high for all issue-specific arguments and significantly differ from the scale midpoint, indicating more than a moderate degree of realism. To test this without bias through the salience emphasis frames that might affect the perception of realism by contextualizing the arguments, the perceived realism for the cost and the efficacy argument is examined only for the groups without frames.

Starting with the perceived realism of the varying cost argument presented in the stimuli, **Table 38** shows that participants perceived the weak cost argument (CHF 10) as realistic with a mean of $M = 4.30$ ($SD = 1.76$) on a scale ranging from 1 to 7. The mean was significantly higher than the midpoint of the scale ($p = .047$). In contrast, the mean of the perceived realism of the strong cost argument (CHF 300) was $M = 3.43$ ($SD = 1.76$), which was significantly lower than for the weak cost argument ($p < .001$, see **Figure 14**). Furthermore, testing this mean against the midpoint of the scale revealed it was significantly ($p < .001$) below the midpoint, indicating a rather low degree of realism (see **Table 38**). However, when testing the mean against the first value on the scale that indicates perception as slightly unrealistic – i.e., scale point 3 – a one-sample *t*-test showed that the mean was at least significantly higher than 3 ($p = .004$).

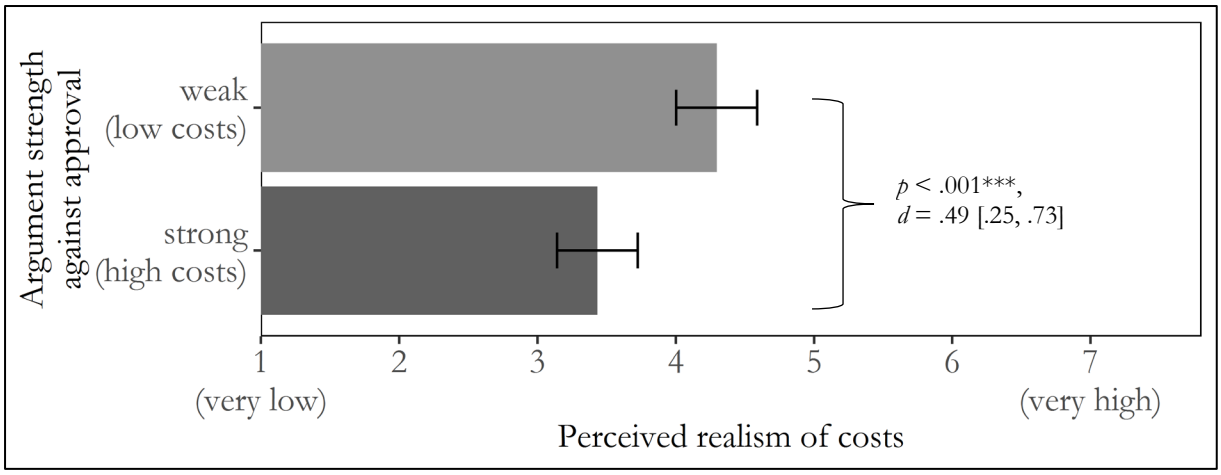
Table 38. Perceived realism of costs against scale midpoint by issue-specific argument strength (only groups without frame)

Issue-specific argument strength				Scale point (scale 1-7)					
				3			4 (midpoint)		
(without frame)	*M*	*SD*	*n*	*t*	*df*	*p*	*t*	*df*	*p*
Weak (low costs)	4.30	1.76	142	8.77	141	< .001***	2.00	141	.047*
Strong (high costs)	3.43	1.76	143	2.94	142	.004**	-3.84	142	< .001***

Note. * $p < .05$, ** $p < .01$, *** $p < .001$, one-sample *t*-tests performed (two-tailed), $n = 285$

Nevertheless, the significantly lower perceived realism of the strong cost argument compared to the weak cost argument is a problem for the internal validity of this study, as one could argue that realism co-varies with issue-specific argument strength. This objection is, of course, correct but not a dramatic threat to internal validity, because the manipulation check showed that the lower degree of realism of the strong argument did not affect the effectiveness thereof. High issue-specific argument strength against approval increased opposition to the approval of the new therapy significantly more than did the weak argument (see **Subchapter 4.4.3** for further detail). That is, issue-specific argument strength had the relevant attitudinal effect, despite a moderate degree of realism.

Figure 14. Perceived realism of costs by issue-specific argument strength (only groups without frame)



Note. 95% confidence intervals for means computed with 5,000 bootstrap samples, two-tailed *t*-test performed, 95% confidence interval for Cohen's *d* in brackets, *** $p < .001$, $n = 285$

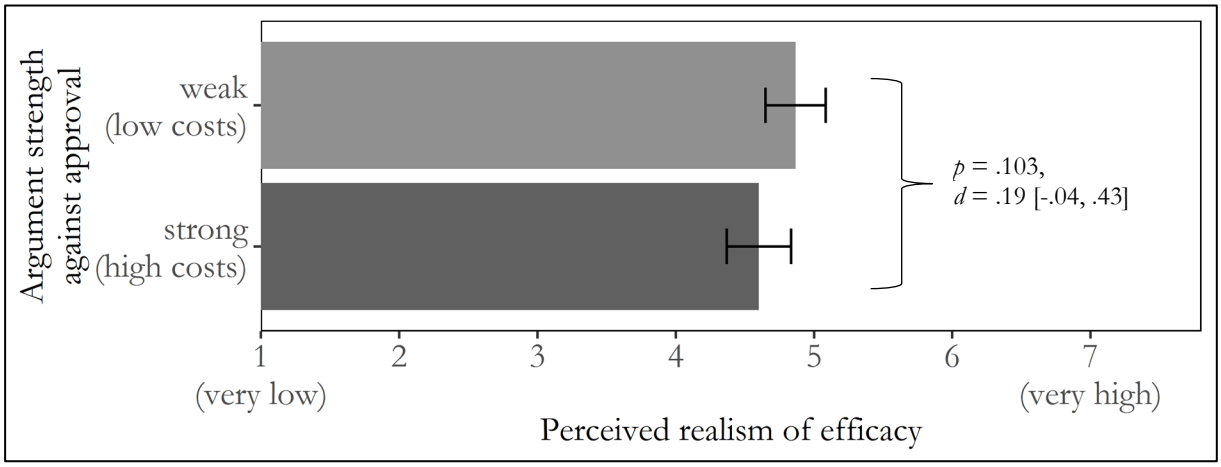
Regarding the constant issue-specific argument of increased efficacy of the new therapy, **Table 39** shows that respondents perceived this argument as realistic regardless of whether it was accompanied by a weak ($M = 4.87$, $SD = 1.31$) or a strong cost argument ($M = 4.60$, $SD = 1.41$). For both situations, the mean for perceived realism of efficacy was significantly higher than the midpoint of the scale (for both, $p < .001$), and the means did not differ significantly from each other ($p = .103$, see **Figure 15**). That is, the treatment check revealed that participants perceived this thematic argument as intended by the design.

Table 39. Perceived realism of efficacy against scale midpoint by issue-specific argument strength (only groups without frame)

Issue-specific argument strength (no frame)				Scale midpoint (4)		
	M	*SD*	*n*	*t*	*df*	*p*
Weak (low costs)	4.87	1.31	142	7.87	141	< .001***
Strong (high costs)	4.60	1.41	143	5.08	142	< .001***

Note. *** $p < .001$, one-sample *t*-tests performed (two-tailed), $n = 285$

Figure 15. Perceived realism of efficacy by issue-specific argument strength (only groups without frame)



Note. 95% confidence intervals for means computed with 5,000 bootstrap samples, two-tailed *t*-test performed, 95% confidence interval for Cohen's *d* in brackets, $n = 285$

Perceptions of manipulation of salience emphasis frames

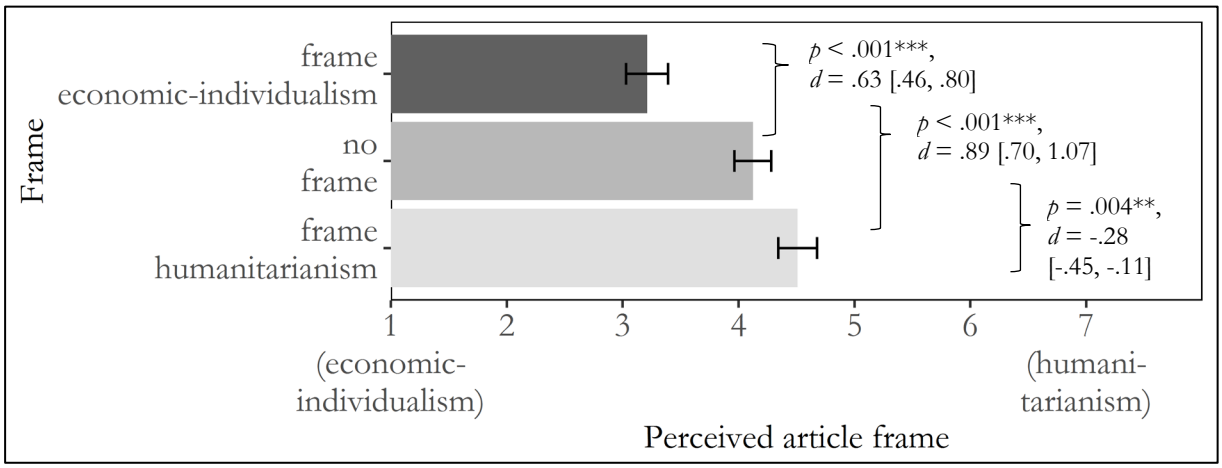
In addition to the perception of the factor issue-specific argument strength, the treatment checks must also show that respondents perceived the manipulation of the other factor salience emphasis frame as intended by the design. For this, the questionnaire measured four treatment check variables. The first important aspect is whether participants recognized the different salience emphasis frames in the news article (variable *perceived article frame*, see **Subchapter 4.3.2**). Here, the groups exposed to the economic-individualism frame should perceive the article as focusing more on the costs of the therapy than the groups with the humanitarianism frame, which should perceive the article's frame as emphasizing the benefits of the new therapy.

Moreover, the perception of both groups should differ from the midpoint of the scale in the respective direction of the frame. Furthermore, the groups without frames should be between the groups with the two different salience emphasis frames and should not differ from the midpoint of the scale. This would indicate that respondents did not

perceive that the article framed the issue with either the economic-individualism frame or the humanitarianism frame.

Figure 16 provides the results for this treatment check based on a Welch one-way ANOVA, which accounted for unequal variances between the three framing conditions. The ANOVA indicated a significant main effect ($p < .001$) of the framing explaining 12.6% of the variance in the perception of the salience emphasis frame. Furthermore, a simple effects analysis using Tukey's correction for multiple comparisons showed that all three framing conditions differed significantly from each other. That is, participants in the condition with the economic-individualism frame perceived the article as emphasizing the costs significantly more than did respondents in the condition without frames ($p < .001$, $d = .63$) and those in the condition with the humanitarianism frame ($p < .001$, $d = .89$). The latter two groups also differed significantly from each other ($p = .004$, $d = -.28$).

Figure 16. Perceived article frame by salience emphasis frame



Note. 95% confidence intervals for means computed with 5,000 bootstrap samples, Welch one-way ANOVA ($F(2,551) = 55.86$, $p < .001$***, $\eta_p^2 = .126$) with two-tailed simple effects tests with Tukey's correction of p-values for multiple comparisons, 95% confidence interval for Cohen's d in brackets, *** $p < .001$, ** $p < .01$, $n = 833$

These findings were corroborated when testing whether the means of the conditions differed from the scale midpoint (see **Table 40**). The mean for the salience emphasis frame economic-individualism ($M = 3.21$, $SD = 1.54$) was significantly ($p < .001$) below the midpoint of 4, indicating that respondents perceived the article as emphasizing the costs of the new therapy. In contrast, the mean for participants in the condition with the humanitarianism frame ($M = 4.51$, $SD = 1.39$) was significantly ($p < .001$) higher than the midpoint of the scale.

In addition, respondents in the condition without frames did not perceive that the article employed a specific frame, as the mean ($M = 4.12$, $SD = 1.35$) did not differ significantly ($p = .127$) from the midpoint. That is, the treatment check for the first aspect

of perception of the frames as intended by the design was successful and respondents recognized the manipulation of the salience emphasis frames.

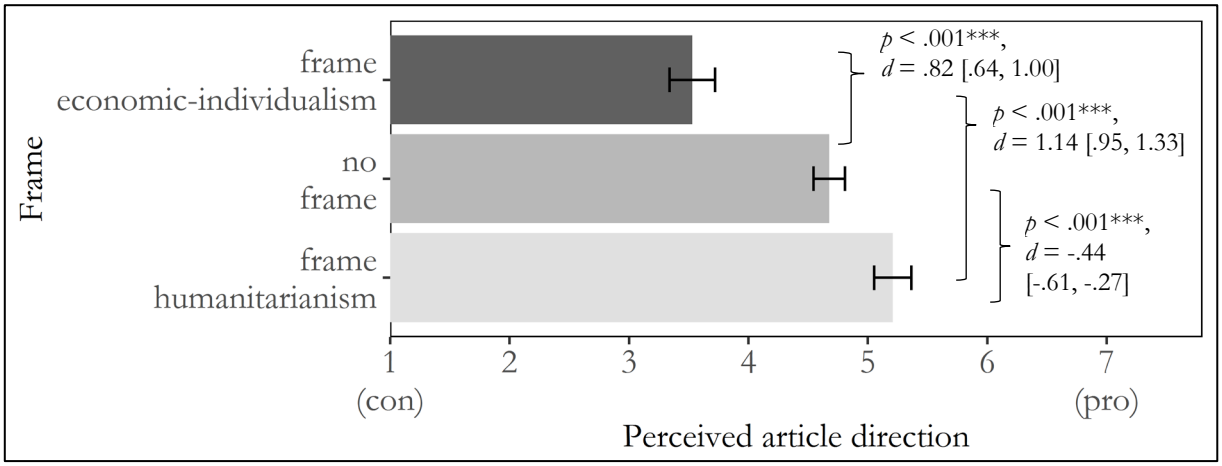
Table 40. Perceived article frame against scale midpoint by salience emphasis frame

				Scale midpoint (4)		
Salience emphasis frame	*M*	*SD*	*n*	*t*	*df*	*p*
Frame economic-individualism	3.21	1.54	279	-8.56	278	< .001***
No frame	4.12	1.35	285	1.53	284	.127
Frame humanitarianism	4.51	1.39	269	6.02	268	< .001***

Note. *** $p < .001$, one-sample *t*-tests performed (two-tailed), $n = 833$

The second variable used to assess the perception of the frames was respondents' perceived direction of the article, i.e., whether they perceived that the article opposed or supported the possible approval of the new therapy (variable *perceived article direction*, see **Subchapter 4.3.2**). The idea behind this variable is the same as for the perception of the salience emphasis frame explained earlier. If the frames were manipulated correctly, participants should perceive different stances of the article depending on the explicit salience frame used. That is, an article with the economic-individualism frame should be perceived as opposing the approval because it is too expensive, while respondents should perceive articles with the humanitarianism frame as supporting the approval. Again, articles without frames should be between the conditions with the different frames.

Figure 17. Perceived article direction by salience emphasis frame



Note. 95% confidence intervals for means computed with 5,000 bootstrap samples, Welch one-way ANOVA ($F(2,540) = 90.25$, $p < .001$***, $\eta_p^2 = .207$) with two-tailed simple effects tests with Tukey's correction of *p*-values for multiple comparisons, 95% confidence interval for Cohen's *d* in brackets, *** $p < .001$, $n = 833$

Figure 17 shows the results for this treatment check, which again employed a Welch one-way ANOVA to analyze participants' perception of the article's direction by the three framing conditions. The analysis revealed a significant main effect of the factor salience emphasis frame ($p < .001$) accounting for 20.7% of the variance in this variable. Furthermore, all conditions again differed significantly from each other (all $p < .001$) in the expected directions with substantial effect sizes up to Cohen's $d = 1.14$, according to an additional simple effects analysis using Tukey's correction.

Further one-sample *t*-tests of the means against the scale midpoint corroborated this finding (see **Table 41**). The mean of the condition with the economic-individualism frame ($M = 3.53$, $SD = 1.62$) was significantly ($p < .001$) lower than the midpoint, indicating that respondents perceived the article as opposing the approval. In contrast, the condition with the humanitarianism frame had a mean ($M = 5.21$, $SD = 1.30$) significantly ($p < .001$) higher than the midpoint, meaning this frame led to the perception that the article supported the approval. However, participants in the condition without frames perceived the article as rather supporting the approval, as the mean in this condition ($M = 4.68$, $SD = 1.13$) was also significantly ($p < .001$) higher than the midpoint of the scale.

The expectation for this condition was that it would not differ from the midpoint, indicating that participants perceived the article as not taking a particular stance because there was no explicit frame contextualization. Only thematic information was presented, which did not explicitly favor an approval. The reason for this result is likely that the issue-specific argument in the informational part supporting the approval was consistently strong, while the issue-specific argument for opposing it was sometimes weak and sometimes strong. This implies that the issue-specific arguments presented on average in the articles without frames were more in the direction of supporting the approval. This might have led to participants' perception that the article supported the approval, despite that there was no explicit endorsement and the article only presented the facts. However, this is not a strong problem for internal validity, because the mean still differed significantly from that in the conditions that employed explicit salience emphasis frames (again, see **Figure 17**). These framing conditions pointed significantly in the correct direction (again, see **Table 41**). Therefore, with minor limitations, the second treatment check variable showed that respondents perceived the salience emphasis frames as intended by the design.

Table 41. Perceived article direction against scale midpoint by salience emphasis frame

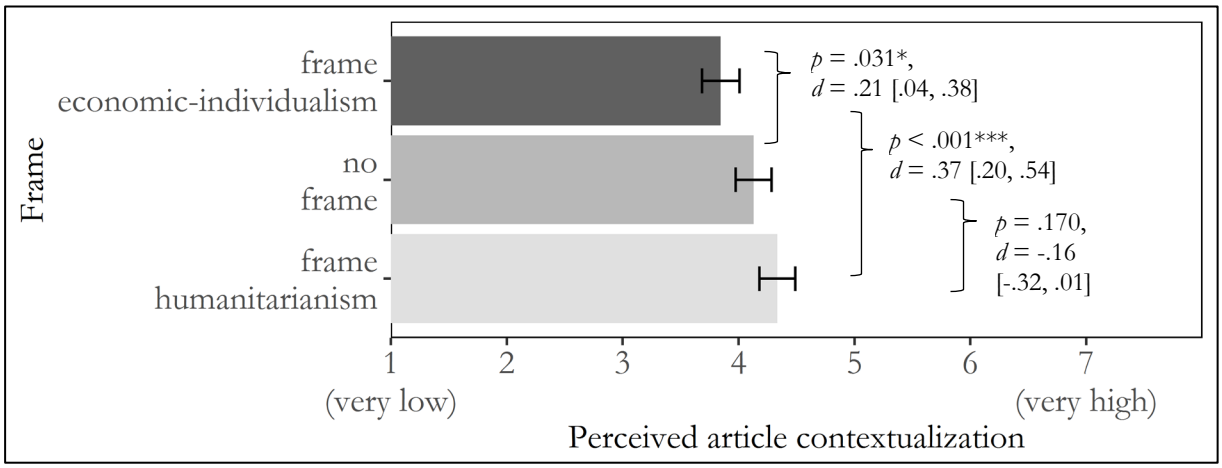
				Scale midpoint (4)		
Salience emphasis frame	*M*	*SD*	*n*	*t*	*df*	*p*
Frame economic-individualism	3.53	1.62	279	-4.83	278	< .001***
No frame	4.68	1.13	285	10.12	284	< .001***
Frame humanitarianism	5.21	1.30	269	15.19	268	< .001***

Note. *** $p < .001$, one-sample *t*-tests performed (two-tailed), $n = 833$

For the treatment checks concerned with the perception of the frames thus far, it was important that the frames differed from each other. In contrast, the next treatment check *perceived article contextualization* (see **Subchapter 4.3.2**) should reveal that the conditions with the salience emphasis frames did not differ from each other, and both should have a higher mean than the articles without frames. The purpose of this treatment check was to show that the isolated informational paragraph gives less context on the topic than situations in which salience emphasis frames explicitly explain the thematic information and emphasize with a superordinate political value the meaning of this information. In addition, the means of the groups with salience emphasis frames should be significantly above the midpoint of the scale, which would indicate that respondents perceived the articles with salience emphasis frames as contextualizing the topic of the new approval in a bigger context (i.e., with a political value).

As expected, a one-way ANOVA confirmed a significant ($p < .001$), albeit small ($\eta_p^2 = .022$) main effect of the factor salience emphasis frame. However, a further simple effect analysis using Tukey's correction revealed that the single levels of this factor differed in directions other than expected (see **Figure 18**). Against the expectation, participants exposed to the economic-individualism frame perceived the article as contextualizing the issue significantly less than respondents in the conditions without frames ($p = .031$) and those exposed to the humanitarianism frame ($p < .001$). Furthermore, the humanitarianism frame was not perceived as contextualizing the issue more than when there was no frame ($p = .170$).

Figure 18. Perceived article contextualization by salience emphasis frame



Note. 95% confidence intervals for means computed with 5,000 bootstrap samples, one-way ANOVA ($F(2,830) = 9.26$, $p < .001$***, $\eta_p^2 = .022$) with two-tailed simple effects tests with Tukey's correction of p-values for multiple comparisons, 95% confidence interval for Cohen's d in brackets, *** $p < .001$, * $p < .05$, $n = 833$

A one-sample *t*-test revealed that the humanitarianism frame had at least a mean significantly higher than the midpoint of the scale ($p < .001$), which was not the case for the conditions without a frame ($p = .102$) but unfortunately also not for the economic-individualism frame ($p = .062$, in the wrong direction, see **Table 42**). Thus, this treatment check did not confirm that the frames used in the articles unambiguously led to the perception that the articles contextualized the issue of the approval.

Table 42. Perceived article contextualization against scale midpoint by salience emphasis frame

				Scale midpoint (4)		
Salience emphasis frame	*M*	*SD*	*n*	*t*	*df*	*p*
Frame economic-individualism	3.85	1.37	279	-1.87	278	.062
No frame	4.13	1.34	285	1.64	284	.102
Frame humanitarianism	4.33	1.30	269	4.23	268	< .001***

Note. *** $p < .001$, one-sample *t*-tests performed (two-tailed), $n = 833$

This was somewhat surprising, given that the salience emphasis frames and the direction of the article were perceived as intended by the manipulation, and the manipulation of the framing paragraph used more than 150 words to explicitly contextualize the given thematic information with a specific political value, i.e., placed the topic within the broader context of either economic-individualism or humanitarianism (see **Subchapter 4.2.4**). One explanation for this unexpected result might be measurement error. Even though the articles with salience emphasis frames contextualized the thematic information more than did articles without frames, this contextualization was still one-sided and highlighted only one political value. Possibly, participants simply confused the questioned contextualization with the diversity of viewpoints presented in the article, which, in fact, was not higher in the articles with salience emphasis frames. This could explain why the condition without frames was not perceived as less contextualizing than the framing conditions. Thus, the threat to internal validity should not be overestimated based on this unsuccessful treatment check, because the framing itself was perceived as intended (see treatment check above).

Article evaluation

The last treatment check was participants' evaluation of the article (variable *article evaluation*, see **Subchapter 4.3.2**). The perception of the salience emphasis frames should differ according to the framing condition, but should not affect the overall evaluation of the article and respondents should perceive the articles as equally credible and realistic, regardless of the framing condition. This requirement is important to ensure that the framing conditions only varied in the salience emphasis frame, but not in terms of other

variables such as realism, which would imply a confounded manipulation to be avoided for the internal validity of the treatments. In addition, the evaluation of the articles should generally be high and above the midpoint of the scale to ensure that participants perceived the mock-up news articles as realistic, which is important for the external validity of the study.

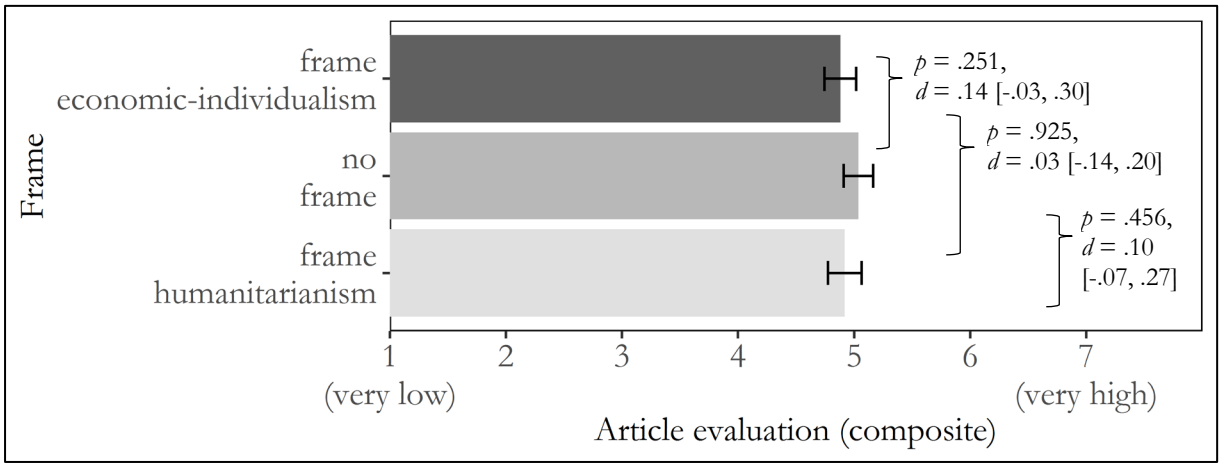
Table 43. Article evaluation (composite) against scale midpoint by salience emphasis frame

				Scale midpoint (4)		
Salience emphasis frame	*M*	*SD*	*n*	*t*	*df*	*p*
Frame economic-individualism	4.88	1.16	279	12.66	278	< .001***
No frame	5.04	1.10	285	15.94	284	< .001***
Frame humanitarianism	4.92	1.21	269	12.49	268	< .001***

Note. *** $p < .001$, one-sample *t*-tests performed (two-tailed)

Table 43 indicates that the means of all three framing conditions were significantly (all, $p < .001$) higher than the midpoint of the scale with a mean of $M = 4.88$ ($SD = 1.16$) for the economic-individualism frame, a mean of $M = 5.04$ ($SD = 1.10$) for the condition without frames, and a mean of $M = 4.92$ ($SD = 1.21$) for the humanitarianism frame. This implies that the articles were perceived as realistic regardless of framing condition. Furthermore, a one-way-ANOVA revealed that the framing conditions did not differ significantly from each other ($p = .253$, $\eta_p^2 = .003$). Thus, the requirement of equal realistic stimuli was fulfilled, strengthening the external validity of the experiment (see **Figure 19**).

Figure 19. Article evaluation (composite) by salience emphasis frame



Note. 95% confidence intervals for means computed with 5,000 bootstrap samples, one-way ANOVA ($F(2,830) = 1.38$, $p = .253$, $\eta_p^2 = .003$) with two-tailed simple effects tests with Tukey's correction of *p*-values for multiple comparisons, 95% confidence interval for Cohen's *d* in brackets, $n = 833$

Table 44. Summary of treatment check results

Variable	Requirement	Result	Conclusion
Recognition costs	Vast majority correct + no differences between all experimental groups	Vast majority correct + no differences except for lower recognition in group "weak argument with frame economic-individualism"	Requirement fulfilled, lower recognition in group as indicator for H5 and H6
Recognition efficacy	Vast majority correct + no differences between all experimental groups	Vast majority correct + no differences between all experimental groups	Requirement entirely fulfilled
Perceived realism of costs	No differences between groups without frame + higher than scale midpoint	High costs with lower realism than low costs + high costs lower than scale-midpoint but higher than unrealistic value	Requirement not fulfilled, but this does not affect the arguments' effectiveness
Perceived realism of efficacy	No differences between groups without frame + higher than scale midpoint	No differences between groups without frame + higher than scale midpoint	Requirement entirely fulfilled
Perceived article frame	Groups without frame not different from scale midpoint + frame economic-individualism (lower) and frame humanitarianism recognized (higher than scale midpoint) + frame conditions differ	Groups without frame not different from scale midpoint + frame economic-individualism (lower) and frame humanitarianism recognized (higher than scale midpoint) + frame conditions differ	Requirement entirely fulfilled
Perceived article direction	Groups without frame not different from scale midpoint + frame economic-individualism contra (lower) and frame humanitarianism pro (higher than scale midpoint) + frame conditions differ	Groups without frame slightly pro (higher than scale midpoint) + frame economic-individualism contra (lower) and frame humanitarianism pro (higher than scale midpoint) + frame conditions differ	Requirement fulfilled, groups without frames still close to scale midpoint
Perceived article contextualization	Articles with frames higher than without frames + no differences between frames	Frame economic-individualism lower than frame humanitarianism and no frame	Requirement not fulfilled, probably measurement error
Article evaluation	No differences between frames + higher than scale midpoint	No differences between frames + higher than scale midpoint	Requirement entirely fulfilled

Summary

This subchapter showed that with minimal exceptions, participants perceived the treatments as intended by the design (for an overview, see **Table 44**). First, the vast majority recognized the issue-specific arguments in the informational paragraph correctly without relevant differences between experimental groups that could threaten internal validity. Second, respondents did not perceive the thematic arguments employed for the manipulation of argument strength as unrealistic, even though the strong issue-specific argument against approval had slightly lower realism (that did not compromise its effectiveness, as described in the next **Subchapter 4.4.3**). Third, participants perceived the framing of the news articles as intended by the respective condition. Fourth, this was also the case for the perceived direction of the article, underlining that the frames in the stimuli were constructed correctly. This is despite that the test of the perceived article contextualization did not add evidence of the correct manipulation of the salience emphasis frames, because this measurement likely measured opinion diversity and not framing. Last, the different frames did not negatively affect the evaluation of the article in terms of its realism, and perceived credibility was high in all conditions, confirming external validity of the treatments.

Therefore, the treatment checks revealed a rather high internal and external validity of the employed manipulations, and participants perceived the treatment properties differently according to the experimental condition. Simultaneously, the conditions demonstrated no differences where there were no differences expected between treatments. Thus, it can be ruled out that confounding variables were manipulated together with the independent variables of interest. However, this is meaningless for internal validity if issue-specific argument strength did not bring about different baseline attitudes in the groups without explicit frames. This is examined in detail next in **Subchapter 4.4.3**.

4.4.3 Manipulation checks

In addition to participants' perceptions of the treatments as intended by the experimental manipulations (see **Subchapter 4.4.2**), the most important prerequisite for successful implementation of the experimental design for internal validity is that the manipulation of issue-specific argument strength was not only recognized, but also brought about different issue attitudes in the groups without frames. In other designs, it would perhaps be sufficient to prove that the manipulation of thematic argument strength led to different perceptions in argument strength (i.e., participants perceive the strong issue-specific argument as stronger than the weak argument). However, as this study focuses on the suppression of argument effects through value-resonant framing (H5), an attitudinal issue-specific argument effect had to be evident without frames, which could then be suppressed by additional value-resonant framing.

That is, when no explicit frame was present that contextualized issue-specific argument strength, argument strength should demonstrate substantial and significant effects on issue attitude. In addition, this effect should not only exist on aggregate, but also for participants with a high preference for economic-individualism. This is the group for which a value-resonant frame was presented with varying argument strength in the design (see **Subchapter 4.2.4**), and thus, is the relevant group for which the suppression of the effects of issue-specific argument strength should occur according to the theory (see **Part III**).

To test for the effect of argument strength in the two control groups without frames, a two-way ANOVA on issue attitude with the factors of issue specific argument strength and political value preference for economic-individualism was performed using the *stats* package in R. A prior Levene's test revealed that the variances were not equally distributed in the respective conditions, indicating that the assumption of homogenous variances for computing ANOVAs was violated. However, while non-parametric tests exist for one-way ANOVAs to account for such violations, no suitable non-parametric tests are available for factorial ANOVAs for more than a 2x2 design (Field, 2009, p. 454). Thus, the results of classic parametric factorial AN(C)OVAs are reported throughout this book, even though some problems with heteroscedasticity might exist. **Table 45** shows that the factor argument strength exerted a significant main effect on participants' issue attitude ($p < .001$, $\eta_p^2 = .040$), and the strong issue-specific argument against approval led to lower support for approval of the new therapy ($M = -0.09$, $SD = 1.39$, $n = 143$) than the weak argument ($M = 0.46$, $SD = 1.20$, $n = 142$) with a substantial effect size of Cohen's $d = .42$ (see **Figure 20**).

Unsurprisingly, there was also a significant main effect of respondents' political value preference ($p < .001$, $\eta_p^2 = .034$). People with a higher preference for economic-individualism showed a stronger tendency to oppose the approval ($M = -0.04$, $SD = 1.34$, $n = 154$) than participants with a lower preference for this value ($M = 0.45$, $SD = 1.26$, $n = 131$). This is consistent with previous research on motivated reasoning, which revealed that the processing and evaluation of political arguments is not unbiased but occurs in accordance with citizens' political preferences (Taber et al., 2009; Taber & Lodge, 2006). Thus, people more critical of the welfare state in general are also more critical about the approval of the new therapy.

The ANOVA in **Table 45** also revealed no significant interaction effect between issue-specific argument strength and respondents' political value preference ($p = .224$). This indicates that the effect of issue-specific argument strength did not significantly differ for participants with a high or a low preference for economic-individualism, even though both groups varied in their general tendency to support the approval. However, the non-significance of the interaction only confirms that effect of issue-specific argument strength does not differ between the two value preferences, but it does not prove whether argument strength had actually an effect when only examining respondents with a high preference for economic-individualism.

Table 45. ANOVA of between-subjects effects of issue-specific argument strength by value preference for economic-individualism (only groups without frames)

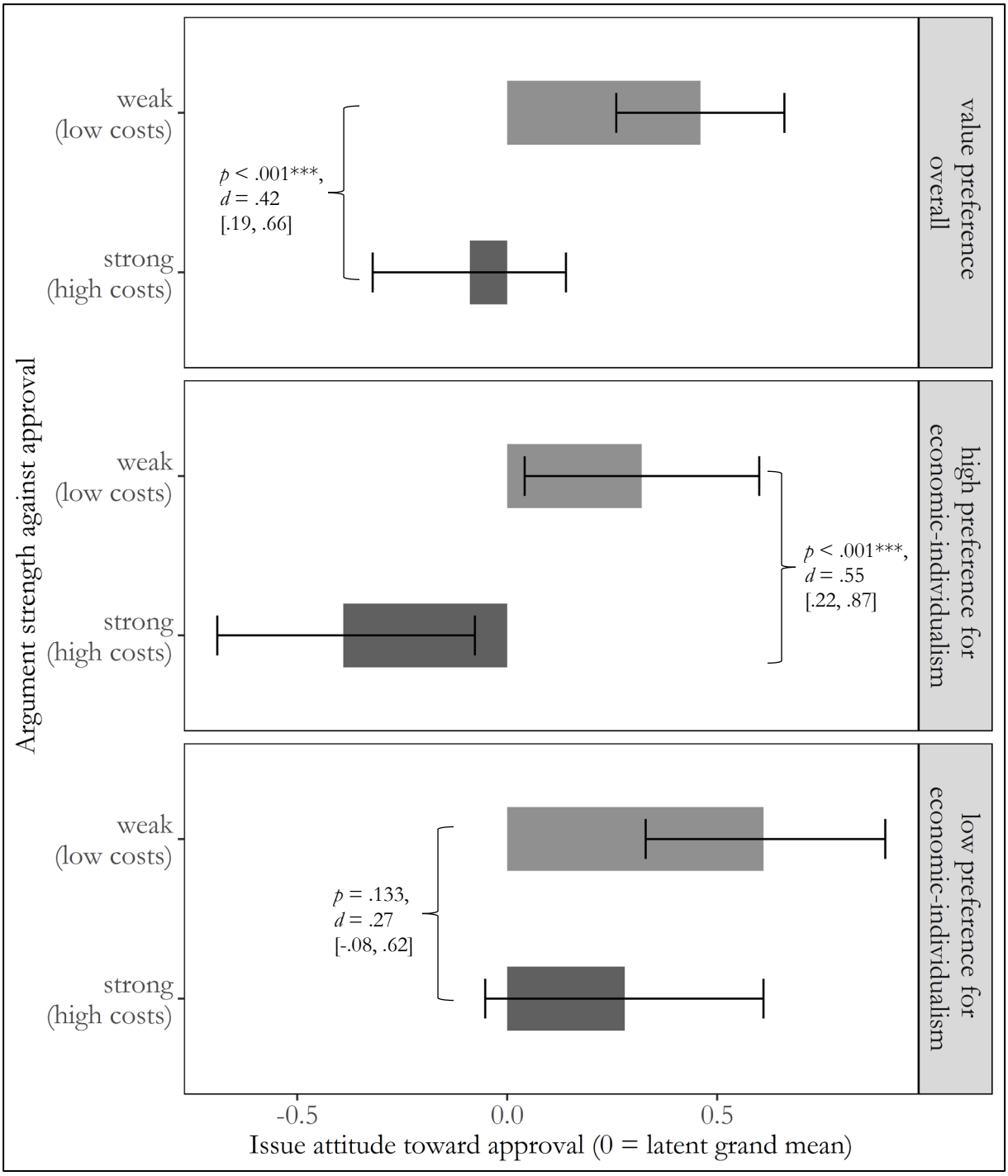
Factor	*df*	*F*	η_p^2	*p*
Adjusted model	3	8.17	.080	< .001***
Argument strength	1	13.11	.040	< .001***
Value preference for economic-individualism	1	9.93	.034	.001**
Argument strength X value preference for economic-individualism	1	1.48	.005	.224

Note. R^2 = .080, $R^2_{adjusted}$ = .070, ** p < .01, *** p < .001, n = 285

To confirm this, a simple effects analysis for the effect of issue-specific argument strength by the single level of respondents' political value preference was run in R using the package *emmeans*. **Figure 20** shows that the effect of issue-specific argument strength on aggregate in the groups without frames persisted when only examining respondents with a high preference for economic-individualism (p < .001), for whom the strong argument led to opposing the approval more strongly (M = -0.39, SD = 1.38, n = 79) than did a weak argument (M = 0.32, SD = 1.21, n = 75). The effect size for this issue-specific argument effect was even slightly higher (Cohen's d = .55) than on aggregate. That is, the manipulation of argument strength in the design was successful and an attitudinal argument effect without frames was found for people with a high preference for economic-individualism, whose diminishing influence through a value-resonant frame can later be tested.

However, the simple effects analyses in **Figure 20** also revealed that the manipulation of issue-specific argument strength did not significantly affect the issue attitude of participants with a low preference for economic-individualism (p = .133). This was despite that the descriptive statistics revealed that a strong argument decreased support for the approval (M = 0.28, SD = 1.32, n = 64) more than did the weak argument, which increased support (M = 0.61, SD = 1.18, n = 67). Citizens with a lower preference for economic-individualism generally care less about financial expenditures connected to social welfare (see **Subchapter 4.3.5**). This is likely why these participants were less sensitive to the differing amount of costs that constituted the varying issue-specific argument strength for opposing the approval. However, this is not problematic when testing the hypotheses concerned with the suppression of argument effects (H5 and H6), because the design includes only value resonance for participants with a high preference for economic-individualism when testing the suppression effect (see **Subchapter 4.2.4**).

Figure 20. Manipulation check for effects of issue-specific argument strength in control groups without frames (on aggregate and by political value preference)



Note. *** $p < .001$, two-tailed simple effects tests, 95% confidence intervals for Cohen's d in brackets, $n_{\text{value preference overall}} = 285$, $n_{\text{high preference for economic-individualism}} = 154$, $n_{\text{low preference for economic-individualism}} = 131$

Summary

The last subchapters showed that the experiment met rather well the criteria of internal validity. First, the randomization procedure was successful, through which the influence of external third variables could be ruled out as a competing explanation for effects found between treatment conditions (see **Subchapter 4.4.1**). Second, participants perceived the experimental stimuli as intended, indicating the construct validity of the manipulations (see **Subchapter 4.4.2**). Third, the manipulation of issue-specific argument strength was successful and brought about different attitudes when no frames were present, allowing for the later test of whether additional value-resonant framing suppressed this issue-specific argument effect (see this subchapter).

In sum, this provides a good foundation for an internally valid test of the hypotheses and research questions. However, this alone is still not sufficient while the statistical conclusion validity of this experiment remains unclear (Shadish et al., 2002, pp. 42–53). Thus, the following **Subchapter 4.4.4** provides important information on how the sample size was set to achieve adequate statistical power to detect effects using the given design of this experiment.

4.4.4 Statistical power

Regardless of a good design and valid operationalizations of an experiment to detect the (causal) effects of an independent variable on a dependent variable while ruling out the influence of confounding variables, the validity of statistical conclusions about the (in-)significance of such effects depends on whether the experiment has enough statistical power to uncover these relationships (Shadish et al., 2002, pp. 42–48). When the sample size is too small and thus, statistical power is too low, a study will not be able to detect effects even if the effects exist in reality. In contrast, when a study has a sample size that is too large and is thus overpowered, even very small effect sizes will reach the level of statistical significance, despite being meaningless and only able to explain 0.01% of the variance in a variable, for example. Thus, it is important to calculate the correct sample size prior to data collection to obtain suitable statistical power for uncovering relevant effects.

According to Cohen (1992), small effects in ANOVAs (the common statistical procedure for analyzing experiments) explain at least 1% of the variance and have an effect size of $f = .1$ ($d = .2$). An effect size of $f = .25$ ($d = .5$) is considered moderate, and large effects have an effect size of $f = .4$ ($d = .8$). The goal of this study was to have enough power to find at least effects with $f = .15$ ($d = .3$). While these are small effects, they are not directly at the lowest level of effect sizes barely considered effects at all. The detection of rather small effects is necessary, because some of the hypotheses predict that the effect of issue-specific argument strength is suppressed through value-resonant frames (H5 and H6). As such, only looking for strong effects would make the test of these hypotheses too easy, and it would be unclear whether the suppression was the result of too low power or of an actual non-effect of issue-specific argument strength when explicitly framed.

For the same reason, the targeted statistical power to detect an effect size of $f = .15$ ($d = .3$) was set to $1\text{-}\beta = .85$, which is a little higher than the common convention for statistical power of $1\text{-}\beta = .80$ (Field, Miles, & Field, 2012, pp. 133–135; Shadish et al., 2002, pp. 45–48). That is, this study aimed for a probability of 85% to find existing small effects of $f = .15$ ($d = .3$) statistically significant at the level of $\alpha = .05$.

Based on these criteria, the necessary sample size to achieve this statistical power for an ANOVA analyzing the 2x3x2 quasi-experimental design with its 12 groups was estimated before data collection using the program G*Power 3 (Faul, Erdfelder, Lang, & Buchner, 2007). The first line in **Table 46** shows the results of this analysis and provides further information on the power for other effect sizes. As shown, to obtain a statistical power of $1\text{-}\beta = .85$ to detect effects of at least $f = .15$ ($d = .3$), a sample size of $n = 833$ is needed. Thus, the quotas for recruiting the sample were calculated based on this sample size (see **Subchapter 4.3.1**). In addition, as data cleansing took place during data collection and only respondents with adequate participation quality were considered for these quotas (see **Subchapter 4.3.3**), the targeted sample size was simultaneously the final sample this study used after data collection for the data analyses.

Of course, this sample size has an even higher statistical power to detect stronger effects. For instance, the power to uncover a medium effect of $f = .2$ is already $1\text{-}\beta = .99$ in the ANOVA with the 12 groups. However, the sample size is not appropriate to test for very small effects of $f = .1$, as the probability for a correct detection is only around 40% ($1\text{-}\beta = .43$).

Furthermore, the second row of **Table 46** shows the statistical power of the given sample size for an ANCOVA with the 12 (quasi-)experimental groups and all possible control variables measured in this study (see **Subchapter 4.3.2**) that serve for the robustness checks of the results (for example, see **Subchapter 5.1.6**). When performing this analysis the power drops considerably for the targeted effect size of $f = .15$ and is only at $1\text{-}\beta = .65$. However, for effects of at least $f = .2$, which are still rather weak effects, the statistical power is high enough ($1\text{-}\beta = .93$) to detect those effects if they are there.

Table 46. Statistical power analysis

Model	$f = .1$ ($d = .2$)	$f = .15$ ($d = .3$)	$f = .2$ ($d = .4$)	$f = .25$ ($d = .5$)
ANOVA ($df_1 = 11$, $df_2 = 821$)	.43	.85	.99	.99
ANCOVA ($df_1 = 27$, $df_2 = 805$)	.28	.65	.93	.99

Note. Displayed is statistical power ($1\text{-}\beta$) of F-test for α error probability = .05 and $n = 833$

In sum, the study has sufficient power to detect even small effects. This is important in testing the suppression of the issue-specific argument effect through value-resonant frames to ensure no incorrect conclusions are drawn regarding non-effects due to a sample size that is too small. Now that the statistical power analysis has been described, the last relevant aspect pertaining to the internal validity of this study has been analyzed. Favorable results were found for all aspects of internal validity tested. Thus, it can be concluded that the hypotheses were tested through a valid, credible, and strong methodological attempt. Before presenting the results for the hypotheses (see **Part V**), the following **Chapter 4.5** summarizes the key aspects of the method employed in this study.

4.5 Summary of methodology

The last subchapters discussed extensively the methodology employed in this study to test the proposed hypotheses and research questions (see **Part III**). Before the results of the hypotheses tests are presented in the results chapter (see **Part V**), this chapter summarizes the key aspects of the method employed. This summary is written to be comprehensible without necessarily reading the more detailed subchapters of the methods section before (see entire **Part IV**). It mainly follows the methods section presented in the journal article related to the study reported in this book (Kaiser, 2019a).

Sample and data cleansing

An interlocked quota sample of residents of the German-speaking part of Switzerland representative for sex and aged between 18 and 69 years was recruited for the purposes of this study. Participants were sampled from the online access panel by Respondi AG and received vouchers for completing of the online study (N = 833). The sample consisted of n = 420 women (50.4%) and n = 413 men (49.6%) with an average age of M = 42.92 years (SD = 14.41) and an average income of around CHF 75,000 (around USD 75,000 at the field time of the study). Furthermore, about half the respondents (n = 440, 53%) had obtained at least a high school degree (see **Subchapter 4.3.1**).

Before data collection, seven criteria for adequate participation quality were defined (see **Subchapter 4.3.3**): not accessing the online questionnaire with a smartphone, spending at least 20 seconds on the page screening the stimulus material, correctly recognizing the issue described in the stimulus, correctly answering three different instructed response items, and respondents' self-assessment that they participated honestly and seriously. If respondents failed to meet any of these criteria, they were screened out directly during data collection and could not complete the questionnaire. Only those who met all of these criteria and completed the questionnaire (N = 833) were included in the data analysis without any further data cleansing after data collection (completion rate: 45.2%).

This sample size was not a coincidence, but fixed a-priori based on a statistical power analysis to ensure that even small effect sizes of $f = .15$ ($d = .3$) could be detected with a power of $1\text{-}\beta = .85$ in a three-way ANOVA with 12 groups (see **Subchapter 4.4.4**).

Design and manipulation

In February 2018, the sample participated in a randomized 2 (issue-specific argument strength) x 3 (salience emphasis frame) between-subjects online experiment with the additional quasi-experimental factor of political value preference (see also **Table 47**). In all conditions, participants read a mock-up online news article dealing with a new bowel cancer therapy and whether this therapy should receive approval from the politically responsible federal health ministry and be offered through compulsory basic health insurance. This move would increase insurance rates for all insured people in Switzerland, making the topic personally relevant to the participants. In addition, the superordinate topic of health politics reflects the classic political cleavage between the political values of economic-individualism and humanitarianism in social welfare attitudes (Feldman & Steenbergen, 2001). These can be addressed well by communicative frames (see **Subchapter 4.2.3**).

Table 47. (Non-)manipulation of issue-specific argument strength, salience emphasis frames, and political value preference for a 2x3x2 (quasi-)experimental between-subjects design with 12 groups

Quasi-factor political value preference for economic-individualism	Factor issue-specific argument strength against approval	Factor salience emphasis frame		
		No frame	Frame economic-individualism	Frame humanitar-ianism
High preference for economic-individualism	Weak argument against approval (CHF 10 costs) vs. strong argument for approval (30% efficacy)	I	V	IX
	Strong argument against approval (CHF 300 costs) vs. strong argument for approval (30% efficacy)	II	VI	X
Low preference for economic-individualism	Weak argument against approval (CHF 10 costs) vs. strong argument for approval (30% efficacy)	III	VII	XI
	Strong argument against approval (CHF 300 costs) vs. strong argument for approval (30% efficacy)	IV	VIII	XII

The stimulus articles contained four different parts: 1) a headline varying according to the frame condition, 2) a constant neutral picture to ensure the realism of the news article, 3) an informational paragraph introducing substantive information about the topic with varying issue-specific argument strength but without any explicit frame contextualization, 4) and a framing paragraph with varying salience emphasis frames contextualizing the given thematic information but without adding any new information about the therapy. Both paragraphs were the same length to avoid favoring either the framing or the argument effect. The mock-up online news articles had a realistic layout (see **Subchapter 4.2.4**).

The first factor varied the issue-specific argument strength against the approval of the therapy as being strong or weak in the informational paragraph. Depending on the condition, participants read either that the new therapy would be considerably more expensive, increasing the yearly insurance rate by CHF 300 per capita (strong issue-specific argument against the approval), or that the new therapy would be only slightly more expensive than existing medicaments, leading to a small yearly insurance rate increase of CHF 10 (weak argument). The counter-argument in favor of the approval was constant in all conditions, mentioning that the new therapy is more effective than existing ones and would increase the probability of recovery from 20% to 30%.

The second factor was the manipulation of the salience emphasis frame in the framing paragraph that contextualized the given information on the topic without adding any new information about the therapy. Since the approval of the new therapy is a social welfare measure dealing with direct assistance for the needy, the article applied either an economic-individualism or a humanitarianism frame (Feldman & Steenbergen, 2001; Shen & Edwards, 2005). The economic-individualism frame contextualized the topic by highlighting the additional costs of the new but only slightly more effective therapy, and argued using the well-known aspect that an approval would be a further example of seriously threatening the financial stability of the basic health care system. In contrast, the humanitarianism frame argued using the political value of providing aid for the sick and the weak. In this view, each new and more effective medical treatment should be available through basic health insurance to ensure the best medical care for everyone. As a third level, this factor also contained conditions without an explicit frame but with only the substantive information on the therapy which varied in issue-specific argument strength. This level served as an integrated control group for the effects of issue-specific argument strength when no explicit frames are present.

The third factor was a non-manipulated quasi-factor obtained by delineating the sample after data collection into participants with a low or high preference for the political value of economic-individualism. Respondents answered this question at the end of the online experiment. To divide participants, the preference for this value was used and not the value of humanitarianism, because the issue-specific argument strength in the design varied only for the economic-individualism argument (i.e., amount of additional costs). As such, to analyze the suppression of issue-specific argument effects through a value-resonant

frame (H5 and H6), it was necessary to generate (mis-)matches between the salience emphasis frame of economic-individualism that employed the political value economic-individualism to contextualize the issue and respondents' political value preference regarding this value. This division enabled retaining the experimental logic of comparing different groups with either value resonance or non-resonance, facilitating the interpretation of results. However, robustness checks in the results section (e.g., in **Subchapter 5.1.6**) also secured the validity of the results beyond this dichotomization and treated the metric measurement for the political value preference for economic-individualism as the third (quasi)-factor of the design.

Procedure and measures

The online access panel provider Respondi AG invited respondents to participate in the study based on predefined interlocked quotas for sex and age (see above). If participants followed the link sent with the invitation, they first had to give their informed consent to participate in the study. Then, the demographic variables of *age*, *sex*, *residency*, *education*, and *income* were measured. These variables were needed to ensure appropriate sampling and were employed as statistical control variables. Next, some filler questions appeared to distract respondents from the goal of the study. Among these questions, a single item was hidden to measure participants' *topic interest* in health insurances on a scale ranging from 1 = "not interested at all" to 6 = "very interested" as a further control variable (M = 4.58, SD = 1.57). Thereafter, respondents were randomly assigned to one of the experimental conditions and saw on the stimulus page the respectively manipulated online news article (for a longer discussion on the order of the questionnaire, see **Subchapter 4.3.3**).

After the stimulus, the questionnaire included metric measurements for the dependent variable and for the mediators, which were all measured using three respective items on six-point scales (for the exact wording and measurement levels of all variables, see **Subchapter 4.3.2**). For *issue attitude*, higher values indicated stronger support for approval of the new cancer therapy (α = .97, ω = .97, M = 4.28, SD = 1.48). Afterward, the items for the mediators asked how expensive respondents perceived the new therapy to be (i.e., *belief content*, α = .94, ω = .94, M = 4.61, SD = 1.21), how important it is for them in general that approvals for new therapies are not too expensive (i.e., *belief importance*, α = .96, ω = .96, M = 3.54, SD = 1.52), and to judge whether the increase of costs is a compelling reason to oppose the approval of the new therapy (i.e., *belief evaluation*, α = .95, ω = .95, M = 3.05, SD = 1.54). While the mediator variables correlated significantly with each other, an analysis of multicollinearity when using all three mediators simultaneously to predict the final dependent variable of issue attitude revealed that they were still statistically distinct with variance inflation factors (VIF) not higher than VIF = 2.28 (see **Subchapter 4.3.5**).

Subsequently, participants answered several treatment checks to ensure they perceived the treatments as intended by the design. Answering a single item, respondents rated on a seven-point scale whether the article emphasized the costs or the benefits of the new therapy (i.e., *perceived article frame*, M = 3.94, SD = 1.53). Furthermore, six items

measured on seven-point scales participants' evaluation of the article in terms of credibility and realism (i.e., *article evaluation*, $\alpha = .88$, $\omega = .88$, $M = 4.95$, $SD = 1.16$). Beyond these two variables, the questionnaire included some further treatment check variables discussed in more detail in **Subchapter 4.4.2**.

Next, participants answered a series of questions on the control variables and assessed their *involvement in reading* the article ($\alpha = .93$, $\omega = .94$, $M = 5.64$, $SD = 1.12$) and *thinking* about the issue described therein ($\alpha = .92$, $\omega = .92$, $M = 4.74$, $SD = 1.72$) through four respective items rated on seven-point scales. In addition, the questionnaire contained measurements for *numeracy* ($\alpha = .89$, $\omega = .90$, $M = 5.69$, $SD = 1.22$) based on a scale by Fagerlin et al. (2007), *need for cognition* (four items on seven-point scales, $\alpha = .85$, $\omega = .86$, $M = 5.10$, $SD = 1.12$), and *need for cognitive closure* ($\alpha = .88$, $\omega = .88$, $M = 3.65$, $SD = 0.89$) employing the items by Roets and van Hiel (2011), but on six-point scales.

Thereafter, the quasi-experimental factor *political value preference for economic-individualism* was measured through four self-constructed items asking participants to rate on six-point scales their agreement that financial considerations should constrain the aid given to individuals by society ($\alpha = .85$, $\omega = .85$, $M = 3.73$, $SD = 1.13$). Last, further control variables were measured: participants' *political value preference for humanitarianism* (four items on six-point scales, $\alpha = .90$, $\omega = .90$, $M = 3.74$, $SD = 1.16$), *centrality of social welfare attitudes* (four items on six-point scales, $\alpha = .92$, $\omega = .93$, $M = 3.97$, $SD = 1.16$), *political leaning* (through a single item on an 11-point scale, $M = 5.98$, $SD = 2.33$), *political knowledge* (a single item on a seven-point scale, $M = 4.22$, $SD = 1.50$), and three nominal items measuring whether respondents are *affected by a serious illness* or personally know someone who is affected.

An initial simultaneous confirmatory factor (CFA) analysis with all measurements containing more than one item revealed that some measures needed adjustment (for further information, see **Subchapter 4.3.4**). After dropping five of the 76 items, the CFA indicated satisfying model fit (CFI = .963, TLI = .960, RMSEA = .031, SRMR = .035). This made it possible to predict the factor scores for all measures with more than one item and to use the latent variables to test the hypotheses (see **Part V**). Through this procedure, all these variables have a mean of zero. To enable meaningful interpretations when using the latent variables, the original means and standard deviations of the composite indices were presented above.

Before delineating the sample into participants with a low or high value preference for economic-individualism to obtain the quasi-experimental factor, the construct validity of the metric measurement had to be tested (see also **Subchapter 4.3.5**). A correlation test with respondents' political leaning revealed a strong and significant correlation ($r = .46$, $p < .001$), indicating that adhering to the value of economic-individualism was related to a market-oriented ideology of "right" social welfare attitudes, as expected. Subsequently, the sample was split into two equally sized subgroups with either a low ($n = 416$, 49.9%) or a high preference for economic-individualism ($n = 417$, 50.1%) based on the median of the

latent variable (*Mdn* = .01 equating to about 3.74 on the composite index, i.e., relatively close to the midpoint of the scale).

Tests of experimental validity

Several additional tests were performed to ensure the validity of the experiment. A test of the independence of the non-manipulated quasi-experimental factor of political value preference for economic-individualism and the manipulated factors of issue-specific argument strength and salience emphasis frames revealed that the manipulations did not affect respondents' political value preference. This enabled including this variable into the design as a quasi-experimental factor. The independence was the case for both the metric latent variable ($p = .117$) and the dichotomized variable in a low and high preference for economic-individualism ($p = .083$). Furthermore, attrition was unrelated to any of the experimental groups ($p = .139$), and all measured control variables were equally distributed in all manipulated treatment conditions (for the exact tests, see **Subchapter 4.4.1**).

In addition, the treatment checks for the salience emphasis frame of the article and the evaluation of the article's realism confirmed that participants perceived the treatments as intended by the design (for all treatment checks, see **Subchapter 4.4.2**). Respondents perceived articles employing the economic-individualism frame ($M = 3.21$, $SD = 1.54$) as emphasizing the costs significantly more strongly than participants in the groups without frames ($M = 4.12$, $SD = 1.35$, $p < .001$) or respondents in the conditions with the humanitarianism frame ($M = 4.51$, $SD = 1.39$, $p < .001$). The latter two also differed significantly from each other in the correct direction ($p = .004$). Furthermore, participants perceived the articles as credible and realistic, regardless of the salience emphasis frame employed, as no significant differences in article evaluation were evident between the different framing conditions ($p = .253$) and all means were significantly higher than the midpoint of the scale (all, $p < .001$).

Finally, the most important prerequisite for valid design was that the manipulation of issue-specific argument strength brought about different issue attitudes in the conditions without frames to ensure an issue-specific argument effect was triggered by the informational paragraph. This should not only have been the case in the aggregate of all respondents in the groups without frames, but also for participants with a high preference for economic-individualism. This enables subsequently analyzing whether this effect is suppressed by additional value-resonant frame contextualization (H5 and H6). A simple effects analysis based on a two-way ANOVA confirmed that the strong cost argument ($M = -0.09$, $SD = 1.39$) led to significantly ($p < .001$) lower support for approval of the new therapy than the weak cost argument ($M = 0.42$, $SD = 1.20$), with a medium effect size ($d = .42$) when examining all respondents in the conditions without frames. This issue-specific argument effect was even stronger ($d = .55$, $p < .001$) for participants with a high preference for economic-individualism, indicating that the chosen issue-specific argument strengths were a relevant predictor for issue attitude when no explicit frames were present (see **Subchapter 4.4.3**).

In sum, the methods section extensively discussed the methodological approach employed in this study and substantiated that the approach mostly fulfilled the prerequisites for adequate design (see **Chapter 4.2**), appropriate measurements (see **Chapter 4.3**), and internal and external validity (see **Chapter 4.4**). These are good foundations from which to test the hypotheses and research questions credibly and strongly and to attribute validity to the results of these tests. The results are provided in detail in the next part (see **Part V**).

V RESULTS

5.1 Effects of salience emphasis frames on issue attitude

5.1.1 Descriptive group statistics and model overview

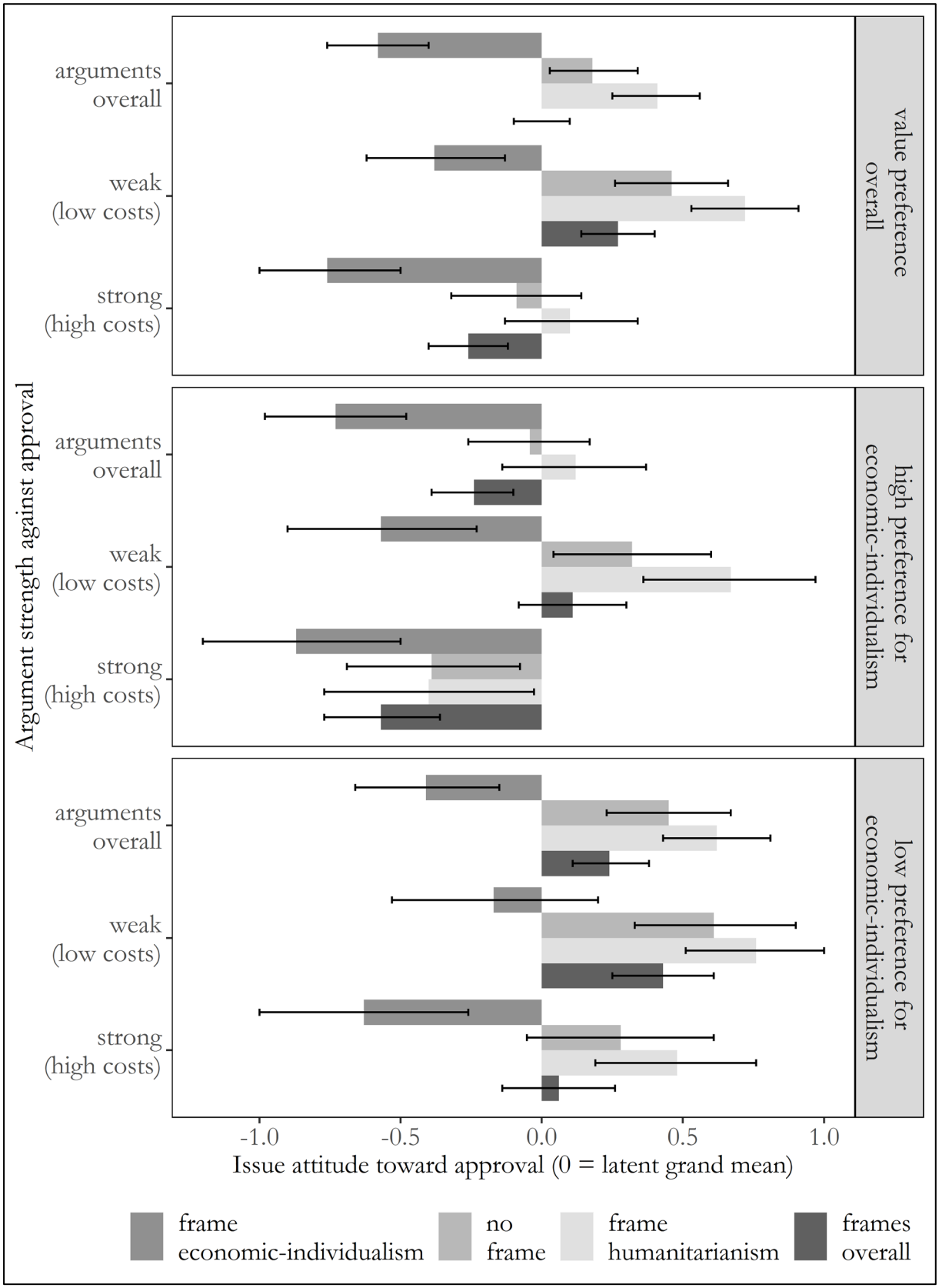
After discussing the method employed in this study (see **Part IV**), the results of the experiment can now be provided. We start with the effects of issue-specific argument strength, salience emphasis frames, and political value preferences on the dependent variable of issue attitude toward the approval of the new therapy against cancer (H1-H7 and RQ1-RQ2, see **Part III**; the journal article concerned with this study also briefly covers these results, see Kaiser, 2019a).

First, a brief overview is provided of the descriptive statistics for citizens' issue attitude by the individual experimental groups and of the factor means (see **Figure 21** for a graphical display and **Table 48** for the exact values). As indicated, there is considerable variation in issue attitude depending on the experimental conditions, suggesting that the manipulations affected the dependent variable in some way. In addition, many of the means not only differ but also their confidence intervals, indicating these differences are statistically relevant.

For example, across all salience emphasis frames and both political value preferences, participants exposed to the strong issue-specific argument against approval more strongly opposed the approval of the new therapy (M = -0.26, SD = 1.51, CI = [-0.40, -0.12]) than respondents exposed to the weak argument (M = 0.27, SD = 1.33, CI = [0.14, 0.40]), indicating first supportive evidence for H1. Furthermore, across both issue-specific argument strengths and both value preferences, the economic-individualism frame led to lower support (M = -0.58, SD = 1.53, CI = [-0.76, -0.40]) than when no frame was present (M = 0.18, SD = 1.32, CI = [0.03, 0.34]) or the counter-frame humanitarianism was present (M = 0.41, SD = 1.30, CI = [0.25, 0.56]). This provided first insights that the hypotheses on the general effects of salience emphasis frames (H2 and H3) might be supported.

However, to comprehensively test the hypotheses, it was insufficient to only examine descriptive differences or to compare confidence intervals of single means. Rather, a statistical model was needed to test all hypothesized effects in a single model that controls for the influence of all other main and interaction effects when estimating the significance of a specific effect. Such a model can provide general insights regarding the significance of effects, but is non-informative in terms of the direction of effects proposed in the hypotheses. To address this, the following subchapters use simple effects analyses (Field et al., 2012, pp. 790–794) and lucid descriptive statistics for the specific comparisons of groups as proposed by the specific hypotheses. The summarized descriptive statistics described in this subchapter only provide a first overview and transparent documentation.

Figure 21. Individual group and factor means for issue attitude with 95% confidence intervals



Note. 95% confidence intervals for means computed with 5,000 bootstrap samples, $n = 833$

Table 48. Descriptive statistics for issue attitude toward approval of the therapy by issue-specific argument strength, salience emphasis frames, and value preference

Value preference	Frame	Argument strength	*M*	*SD*	95% CI	*n*
Overall	Economic-individualism	Overall	-0.58	1.53	[-0.76, -0.40]	279
	No frame	Overall	0.18	1.32	[0.03, 0.34]	285
	Humanitarianism	Overall	0.41	1.30	[0.25, 0.56]	269
	Overall	Overall	0.00	1.45	[-0.10, 0.10]	833
	Economic-individualism	Weak	-0.38	1.42	[-0.62, -0.13]	132
	No frame	Weak	0.46	1.20	[0.26, 0.66]	142
	Humanitarianism	Weak	0.72	1.11	[0.53, 0.91]	132
	Overall	Weak	0.27	1.33	[0.14, 0.40]	406
	Economic-individualism	Strong	-0.76	1.61	[-1.02, -0.50]	147
	No frame	Strong	-0.09	1.39	[-0.32, 0.14]	143
	Humanitarianism	Strong	0.10	1.40	[-0.13, 0.34]	137
	Overall	Strong	-0.26	1.51	[-0.40, -0.12]	427
High preference for economic-individualism	Economic-individualism	Overall	-0.73	1.56	[-0.98, -0.48]	149
	No frame	Overall	-0.04	1.34	[-0.26, 0.17]	154
	Humanitarianism	Overall	0.12	1.39	[-0.14, 0.37]	114
	Overall	Overall	-0.24	1.48	[-0.39, -0.10]	417
	Economic-individualism	Weak	-0.57	1.40	[-0.90, -0.23]	69
	No frame	Weak	0.32	1.21	[0.04, 0.60]	75
	Humanitarianism	Weak	0.67	1.13	[0.36, 0.97]	55
	Overall	Weak	0.11	1.35	[-0.08, 0.30]	199
	Economic-individualism	Strong	-0.87	1.68	[-1.24, -0.50]	80
	No frame	Strong	-0.39	1.38	[-0.69, -0.08]	79
	Humanitarianism	Strong	-0.40	1.42	[-0.77, -0.03]	59
	Overall	Strong	-0.57	1.52	[-0.77, -0.36]	218
Low preference for economic-individualism	Economic-individualism	Overall	-0.41	1.49	[-0.66, -0.15]	130
	No frame	Overall	0.45	1.26	[0.23, 0.67]	131
	Humanitarianism	Overall	0.62	1.19	[0.43, 0.81]	155
	Overall	Overall	0.24	1.38	[0.11, 0.38]	416
	Economic-individualism	Weak	-0.17	1.44	[-0.53, 0.20]	63
	No frame	Weak	0.61	1.18	[0.33, 0.90]	67
	Humanitarianism	Weak	0.76	1.10	[0.51, 1.01]	77
	Overall	Weak	0.43	1.29	[0.25, 0.61]	207
	Economic-individualism	Strong	-0.63	1.52	[-1.00, -0.26]	67
	No frame	Strong	0.28	1.32	[-0.05, 0.61]	64
	Humanitarianism	Strong	0.48	1.27	[0.19, 0.76]	78
	Overall	Strong	0.06	1.44	[-0.14, 0.26]	209

Note. CI = 95% confidence interval for means computed with 5,000 bootstrap samples, $M = 0.00$ = latent grand mean

Regarding a simultaneous test of all hypotheses in a single model, a saturated three-way ANOVA with the independent variables of issue-specific argument strength, salience emphasis frame, political value preference as a two-level quasi-factor, and all possible interactions between these variables was computed to explain the dependent variable of issue attitude (for the R-script for the data analysis, see https://doi.org/10.23662/FORS-DS-1013-1). To enable a meaningful interpretation of the main effects proposed in the hypotheses (H1–H4) while simultaneously testing interaction effects in the model (RQ1-RQ2 and H5-H7), the ANOVA employed sum-to-zero contrasts, which are often used in regression approaches not to test against the grand mean but against defined groups (Darlington & Hayes, 2016, pp. 289–291).

The economic-individualism frame was the central frame in the design, because issue-specific argument strength varied only for this salience emphasis frame (see **Subchapter 4.2.4**). Therefore, the ANOVA defined the economic-individualism frame as the reference group in the three-level factor frame to test its effects compared to situations without a frame and compared to the humanitarianism counter-frame. For the other two two-level factors of issue-specific argument strength and political value preference, the respective two levels were tested against each other in the model. That is, weak and strong issue-specific arguments were tested against each other in the model (H1); the frame economic-individualism was tested once against the no frame condition (H2) and once against the counter-frame humanitarianism (H3); low and high preference for the political value of economic-individualism were tested against each other (H4); and all two- and three-way interaction effects consisting of the frame variable were tested twice, once for situations with the economic-individualism frame and no frame (H5) and once for the groups with the economic-individualism frame compared to the counter-frame humanitarianism (H6).

The decomposition of the three-level factor frame into two contrast variables (frame economic-individualism vs. no frame and frame economic-individualism vs. frame humanitarianism) has the additional advantage that the ANOVA can test the suppression effects in H5 and H6 with two separate three-way-interactions. This enables a clearer assessment when the suppression effect takes place: compared to situations without frames (H5) or compared to situations with a counter-frame (H6) or both. If the three-level factor was used as a single variable in the ANOVA, only one interaction term could be employed to test both hypotheses together and it would be unclear which of the comparisons drove the interaction.

In addition, the delineation helps in assessing H7, which is concerned with the varying influence of citizens' political value preference when salience emphasis frames and issue-specific argument strength are congruent or incongruent in a political message. This situation only applies for the levels with frames, but not to the level without frames, and can be tested with the same interaction effect used for H6.

Table 49. ANOVA of between-subjects effects of issue-specific argument strength, salience emphasis frames, political value preference (dichotomized), and their interactions on issue attitude

Factor	*df*	*F*	η_p^2	*p*
Adjusted model	11	12.83	.147	< .001***
Argument strength	1	31.50	.037	< .001***
Frame economic-individualism vs. no frame	1	44.98	.052	< .001***
Frame economic-individualism vs. humanitarianism	1	64.81	.073	< .001***
Value preference for economic-individualism	1	20.59	.024	< .001***
Argument strength X frame economic-individualism vs. no frame	1	0.36	< .001	.549
Argument strength X frame economic-individualism vs. humanitarianism	1	1.54	.002	.215
Argument strength X value preference for economic-individualism	1	3.05	.004	.081
Frame economic-individualism vs. no frame X value preference for economic-individualism	1	0.48	< .001	.486
Frame economic-individualism vs. humanitarianism X value preference for economic-individualism	1	0.50	< .001	.482
Argument strength X frame economic-individualism vs. no frame X value preference for economic-individualism	1	1.37	.002	.242
Argument strength X frame economic-individualism vs. humanitarianism X value preference for economic-individualism	1	4.13	.005	.043*

Note. $R^2 = .147$, $R^2_{adjusted} = .135$, * $p < .05$, *** $p < .001$, $n = 833$

Table 49 shows the results of this three-way ANOVA. The model itself was significant ($p < .001$) and explained 14.7% of the variance in issue attitude ($R^2_{adjusted} = 13.5\%$). Furthermore, all proposed main effects were significant: issue-specific argument strength (H1, $p < .001$, $\eta_p^2 = .037$), the economic-individualism frame compared to the no frame condition (H2, $p < .001$, $\eta_p^2 = .052$), the economic-individualism frame compared to the counter-frame humanitarianism (H3, $p < .001$, $\eta_p^2 = .073$), and participants' value preference for economic-individualism (H4, $p < .001$, $\eta_p^2 = .024$).

The interactions between issue-specific argument strength and salience emphasis frames were both insignificant (RQ1, $p = .549$, and $p = .215$), indicating that the main effect of frames did not differ according to issue-specific argument strength. The interactions

between salience emphasis frames and political value preference were also insignificant (RQ2, p = .486, and p = .482), which is a first sign that the frames exerted comparable effects regardless of citizens' value preference.

Of the three-way interactions between issue-specific argument strength, salience emphasis frames, and political value preference, only the interaction comparing the effect of the economic-individualism frame and the counter-frame humanitarianism was significant (p = .043, η_p^2 = .005). The three-way interaction consisting of the comparison between the economic-individualism frame and no frame was insignificant (p = .242). This indicates that the individual main effects of issue-specific argument strength, frames, and value preference did not differ according to the levels of the other variables when only considering conditions with no frame and the economic-individualism frame (H5). However, they did differ significantly when examining situations with different frames (H6 and H7).

Thus far, the statistically significant effects for the proposed hypotheses are evident, except for H5. However, the ANOVA itself provided no information about the direction of these effects; thus, it is insufficient for a full hypotheses test. Therefore, the following subchapters present for each single hypothesis and research question the relevant simple effects to determine the direction of the main effects and to decompose the interaction effects, enabling thorough interpretation of the results.

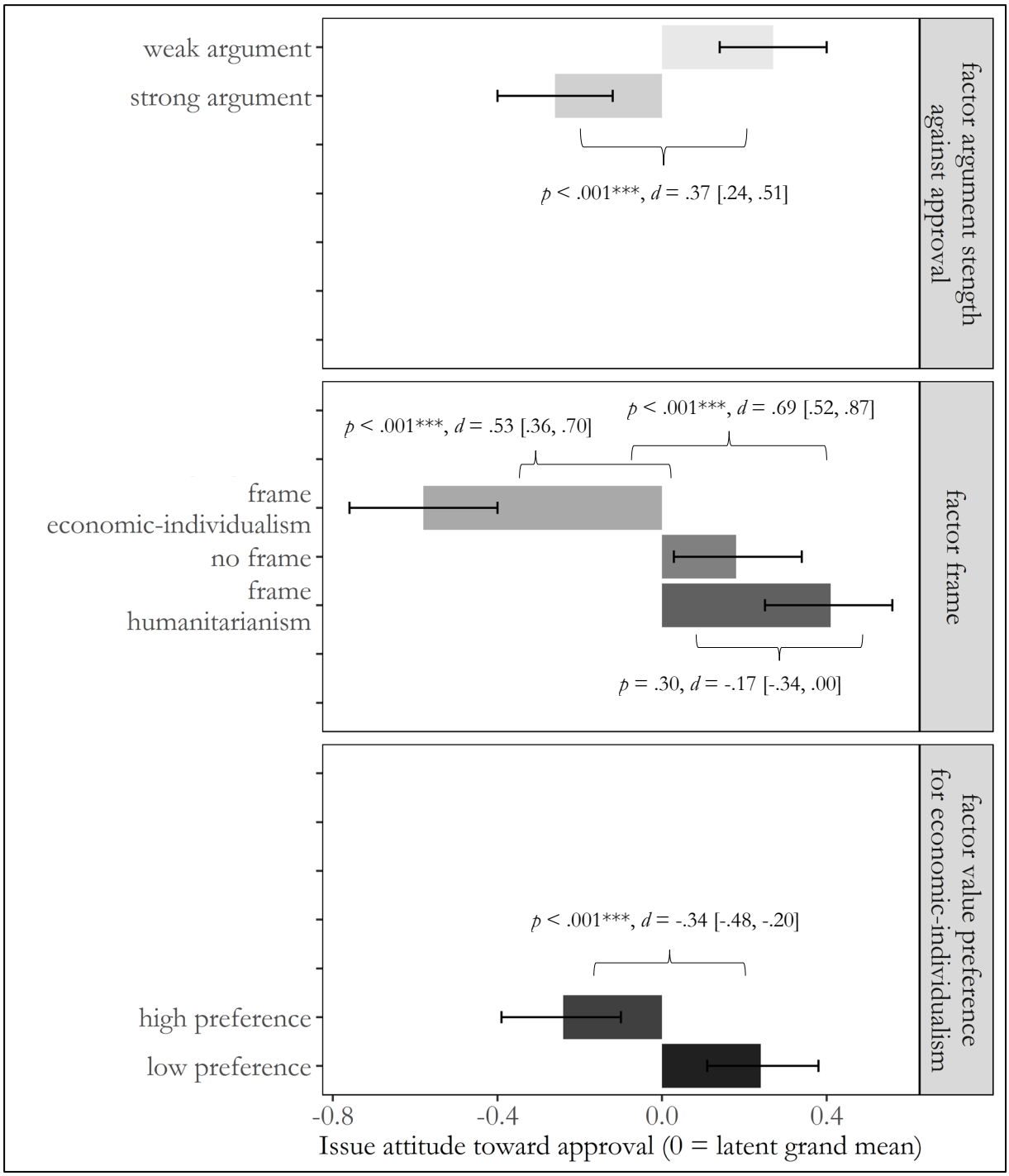
5.1.2 Main effects of issue-specific argument strength, salience emphasis frames, and political value preferences on issue attitude (H1-H4)

Statistical results

The first hypothesis (H1) proposed a main effect of issue-specific argument strength overall conditions, i.e., that issue attitude varies on average according to the manipulated argument strength to oppose the approval of the new therapy. The relevant main effect for this hypothesis was significant in the full ANOVA model (p < .001, η_p^2 = .037, see **Table 49**), and a simple effects analysis revealed that the effect showed in the expected direction (see **Figure 22**). Participants exposed to the strong issue-specific argument against approval of the new therapy showed significantly (p < .001) lower support for the approval (M = -0.26, SD = 1.51) than respondents in the conditions with a weak issue-specific argument for this issue position (M = 0.27, SD = 1.33). Even though the effect size was rather weak (Cohen's d = .37), this result completely supports H1.

The second hypothesis (H2) postulated that when the economic-individualism frame contextualizes issue-specific arguments, participants oppose the approval more strongly than when no frame is present. Again, the ANOVA model already provided initial support for this hypothesis (p < .001, η_p^2 = .052, see **Table 49**).

Figure 22. Factor means for issue attitude with 95% confidence intervals and main effects



Note. 95% confidence intervals for means computed with 5,000 bootstrap samples, *** $p < .001$, two-tailed simple effects tests (with Tukey's correction of p-values for multiple comparisons in factor frame), 95% confidence interval for Cohen's d in brackets, $n = 833$

A further simple effects analysis using Tukey's correction for multiple comparisons in the three-level factor salience emphasis frame (see **Figure 22**) provided further evidence for H2, revealing that the direction of the effect was as expected. Respondents exposed to the economic-individualism frame showed significantly ($p < .001$) lower support for approval ($M = -0.58$, $SD = 1.53$) than those in conditions without additional framing ($M = 0.18$, $SD = 1.32$). This effect was medium-sized ($d = .53$).

The simple effects analysis (see **Figure 22**) also supported the proposed direction of hypothesis H3, which proposed that the economic-individualism frame leads to opposing the approval significantly ($p < .001$) more strongly ($M = -0.58$, $SD = 1.53$) than when the counter-frame humanitarianism is present ($M = 0.41$, $SD = 1.30$). As already indicated by the full ANOVA model (see second contrast for frame effect in **Table 49** with $p < .001$, $\eta_p^2 = .073$), this effect was even stronger ($d = .69$) than the aforementioned effect of the economic-individualism frame compared to seeing no explicit frame.

However, the simple effects analysis for the factor frame also revealed an aspect the full ANOVA model could not test, as this model only allows for a limited number of contrasts: the effect of the counter-frame humanitarianism compared to situations without frames. As **Figure 22** shows, this effect was insignificant ($p = .30$, $d = -.17$), indicating that framing information with the political value of humanitarianism did not lead to stronger support for the approval.

The additional simple effects analysis in **Figure 22** specifies the direction of the main effect of respondents' value preference for economic-individualism revealed in the full ANOVA model ($p < .001$, $\eta_p^2 = .024$, see **Table 49**). As proposed by hypothesis H4, participants with a high preference for the political value of economic-individualism opposed the approval of the new therapy significantly ($p < .001$) more strongly than citizens with a low preference therefor, albeit with a rather small effect size ($d = -.34$).

Interpretation of results for H1 to H4

The statistical results for the main effects revealed that all three independent variables of interest – issue-specific argument strength, salience emphasis frames, and citizens' political value preference – affected participants' attitude toward approval of the new therapy.

The main effect of issue-specific argument strength supports H1 and confirms the general importance of new thematic information containing substantive, policy-relevant information in attitude formation. This result is aligned with the findings of Leeper and Slothuus (2017), who also disentangled thematic information and emphasis frames in their experiments (see **Subchapter 2.8.1**). This means there is a certain degree of rationality in citizens' attitude formation, and they follow new information with high issue-specific argument strength for a specific issue position rather than new thematic information with low argument strength. In addition, the effect size of issue-specific argument strength across all conditions (i.e., including framed thematic information) is $d = .37$, which is comparable to the effect of argument strength when only considering situations without explicit framing but only new thematic information ($d = .42$, see the results of the

manipulation check in **Subchapter 4.4.3**). Therefore, overall, a rather stable influence of issue-specific argument strength seems to be evident, regardless of the presence or absence of salience emphasis frames.

Based on this result in isolation, it can be speculated whether former studies that confounded emphasis frames with new thematic information only revealed frame effects because of the significant influence of varying issue-specific information and that citizens form their attitudes rationally based on only substantive content about a topic and are thus not easily swayed by frames (cf. Leeper & Slothuus, 2017). However, the effect size of the significant influence of issue-specific argument strength across all conditions is rather small ($d = .37$), suggesting that thematic information is probably not the only relevant factor for attitude formation and that other variables may affect citizens' issue attitudes.

Given the results of this study, one additional factor that influences citizens' issue attitude is salience emphasis framing without adding any further thematic information. When the economic-individualism frame contextualized the thematic information, citizens based their attitude formation on this frame and opposed the approval of the new therapy significantly more strongly than in situations without frames but only new thematic information (H2) and also compared to situations in which the counter-frame humanitarianism contextualized the thematic information (H3). That is, in contrast to the results of Leeper and Slothuus (2017), who did not find the effects of non-confounded frames, this study found unique effects of salience emphasis frames that are not confounded with the supply of further issue-specific information. This is likely because the study reported in this book used a more externally valid type of non-confounded frame (i.e., salience emphasis frame) and did not favor the occurrence of the effect of thematic information by design, which Leeper and Slothuus (2017) did (see **Subchapter 2.8.1**).

The salience emphasis frames in the current study employed fundamental political values to contextualize the thematic information and to explain how to evaluate this information. When presented in a one-sided way, value emphasis frames significantly affected issue attitudes in many previous studies (Beattie & Milojevich, 2017; Chong & Druckman, 2007a; Nelson, 2004; Shen & Edwards, 2005), because they draw on available, accessible, and applicable considerations (Chong & Druckman, 2007c) deeply rooted in society and with cultural resonance (Entman, 1993). This alters how citizens interpret an issue (also see **Subchapter 2.5.2**). According to the results of this study, this is also the case when such value frames are not confounded with additional thematic information, but applied only as salience emphasis frames. This means that citizens are also susceptible to unique frame effects in one-sided framing situations.

This result implies that the emphasis framing effects reported in the literature thus far might not be as exaggerated as feared by critics highlighting the confounding of frames and thematic information (e.g., Leeper & Slothuus, 2017). Possibly, former effects were also the result of frames and not only of varying thematic information, because the results presented here confirm that frames alone can effectively shift citizens' issue attitudes.

Moreover, this result raises first concerns about citizens' rationality in attitude formation under framing conditions. As explained in **Subchapter 2.8.1**, it can be problematic if citizens arbitrarily adopt different attitudes depending on changes to the frame, not on substantive thematic information, because this violates the principle of rationality of the consistency and coherence of preferences and choices (Tversky & Kahneman, 1981). However, given that the effect of issue-specific argument strength persisted on average, it is an exaggerated conclusion that attitude formation is completely irrational when thematic information is framed. Nevertheless, the effect size of the framing effect of economic-individualism was at least descriptively stronger than the effect size of issue-specific argument strength. This suggests that salience emphasis frames at least biased rational attitude formation, which should only be based on substantive thematic information.

Unsurprisingly, the effect of the economic-individualism frame was descriptively somewhat stronger compared to the situation in which the counter-frame humanitarianism contextualized the thematic information (d = .69) than compared to situations without additional framing but only new thematic information (d = .53). This is because in the former case, the effects of the two different (one-sided) salience emphasis frames pointed to different attitude directions, which accumulated to a higher effect size. This is a typical result for studies on emphasis framing effects in which treatment-treatment comparisons lead to stronger framing effects on average than treatment-control comparisons (for a meta-analysis, see Leeper & Slothuus, 2017).

However, the treatment-control comparison for the humanitarianism frame revealed that this salience emphasis frame did not significantly increase support for the approval compared to situations with only new thematic information (p = .30, d = -.17), although the mean difference was in the expected direction (see **Figure 22**). This non-effect likely is the result of a ceiling effect produced by the specific design of this study. Given the political issue selected for the experiment and the consistently strong issue-specific argument of saving lives in all stimuli (see **Subchapter 4.2.4**), the support for the approval on average was rather high with a grand mean of M = 4.28 (SD = 1.48) on a scale ranging from 1 to 6 (translating to M = 0.00 for the latent variable analyzed here, see **Subchapter 4.3.5**). Presumably, the humanitarianism frame could simply not further increase the already high support for approval, because an approval of the new life-saving therapy against cancer could not be supported much more strongly on the scale.

Thus, whereas the results support H3, namely that different salience emphasis frames lead to significantly different issue attitudes, H2 is only partially supported. The hypothesis remains unfalsified for the economic-individualism frame compared to thematic information without explicit framing, but not for the humanitarianism frame compared to situations without frames. Thus, the results for H2 should *not* be interpreted as meaning that salience emphasis frames *always* exert significant effects on issue attitude. Instead, the results should be considered proof of the theory that salience emphasis frames *can* have such an effect.

In addition to the main effects of frames and issue-specific argument strength, the third independent variable, citizens' value preference for economic-individualism, also demonstrated the expected main effect, supporting H4. That is, political value preferences on average play across all conditions the expected role in attitude formation toward political issues. Citizens rely on their value preferences to evaluate issues or events under the umbrella of their core beliefs (Ciuk et al., 2017; Feldman, 1988; Jacoby, 2006), as already elaborated in **Subchapter 2.5.1**. This result is important as it elucidates the general relevance of this variable. Its more complex influence as a moderator of salience emphasis framing effects is analyzed in more detail in the following subchapters.

In sum, this subchapter revealed significant main effects of the three independent variables of issue-specific argument strength (H1), salience emphasis frames (H2 and H3), and citizens' political value preference (H4) on issue attitude. This indicates that all three variables are important in understanding citizens' attitude formation. Next, **Subchapter 5.1.3** looks in more detail at the effects of salience emphasis frames to test for the persistence of frame effects when the informational setting of issue-specific argument strength varies (RQ1) and when frames are (non-)resonant with citizens' political value preference (RQ2).

5.1.3 Effects of salience emphasis frames by issue-specific argument strength and political value preferences (RQ1 and RQ2)

Thus far, the presentation and interpretation of the results has focused on the main effects of the three independent variables of issue-specific argument strength, salience emphasis frames, and political value preference. How valid these interpretations are and whether statistical main effects can be interpreted as unconditional main effects depends on whether no disordinal interactions exist (Reinard, 2006, pp. 214–220). Such interactions would indicate that depending on the levels of other factors, the effect of the same variable is in different directions and thus, the effect is not a real main effect, but a varying conditional effect. Furthermore, looking for interactions is necessary for the more complex hypotheses H5 to H7 and the research questions RQ1 and RQ2.

This subchapter provides the results concerned with the first two research questions. Research question RQ1 asked whether the found main effects of the economic-individualism frame only persist when contextualizing the already strong issue-specific argument for opposing the new approval or also when argument strength is weak for this issue position. RQ2 asked whether these frame effects only work when the salience frames are value-resonant or also when they are non-resonant, i.e., when participants with a low preference for economic-individualism are exposed to the economic-individualism frame.

Statistical results

The full ANOVA model presented in **Table 49** in **Subchapter 5.1.1** already indicated that the effects of the salience emphasis frames did not differ by issue-specific argument

strength, as the respective two-way interactions were insignificant (p = .549 and p = .215). However, this does not automatically mean, significant effects of frames were evident for the weak as well as for the strong issue-specific argument. Thus, a further simple effects analysis with Tukey's correction was computed (see **Figure 23**). When considering only conditions with weak issue-specific argument strength to oppose the approval, the analysis revealed that the economic-individualism frame significantly (p < .001, d = .64) reduced support for the approval (M = -0.38, SD = 1.42) compared to situations without frames (M = 0.46, SD = 1.20) and compared to the counter-frame humanitarianism (M = 0.72, SD = 1.11, p < .001, d = .86).

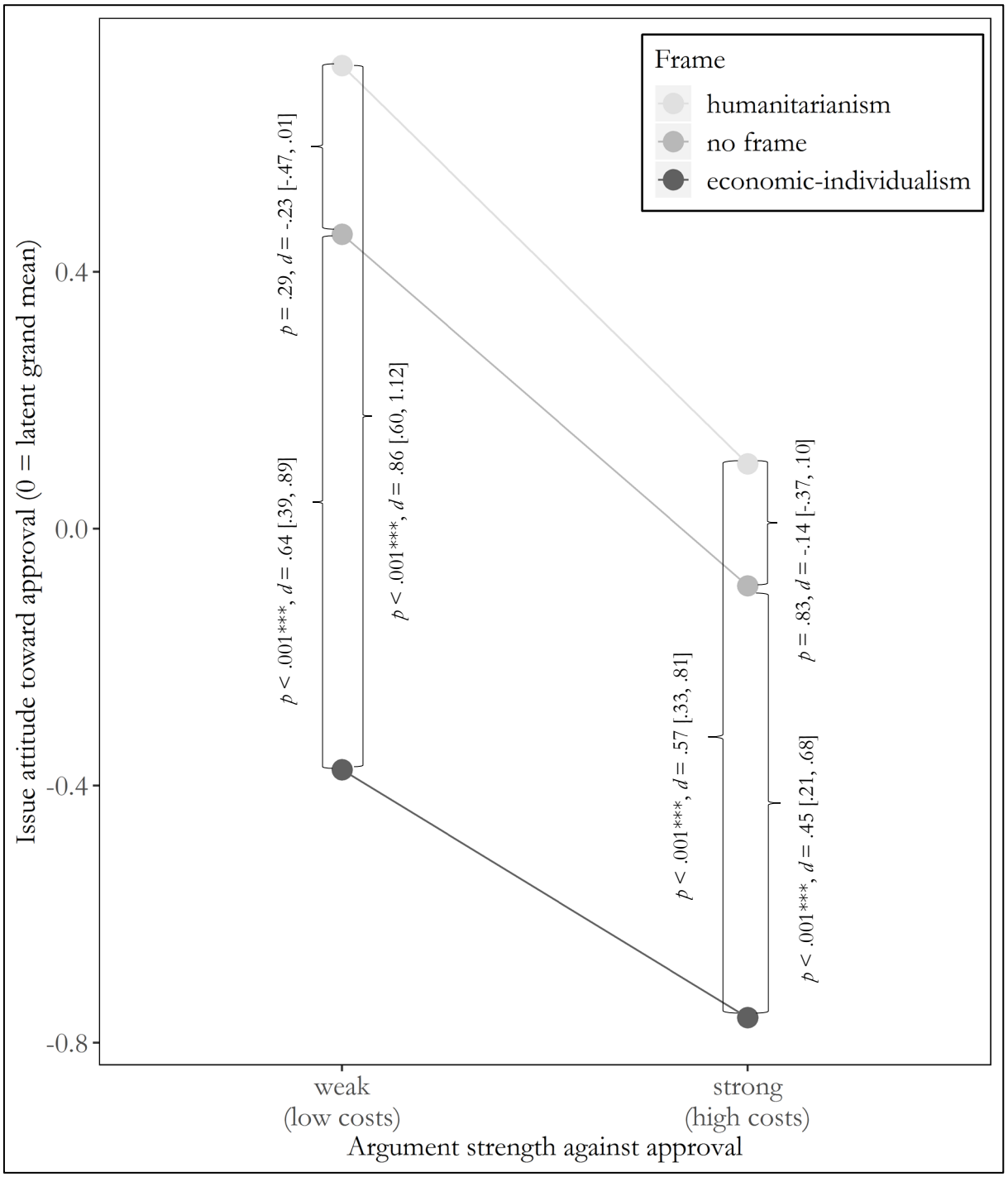
Similar results were found when issue-specific argument strength against the approval was strong. Again, the economic-individualism frame (M = -0.76, SD = 1.61) significantly reduced support (p < .001, d = .45) compared to no frame (M = -0.09, SD = 1.39) and compared to the humanitarianism frame (M = 0.10, SD = 1.40, p < .001, d = .57), albeit with slightly lower but still medium-sized effects. As such, the formal answer to research question RQ1 is that a salience emphasis frame affects citizens' issue attitudes not only when the constellation of issue-specific arguments is already strong to have an attitude in the direction of the frame, but also when thematic argument strength is weak for such an opinion. However, as previously indicated by the pairwise comparisons for the main effect of salience emphasis frames (see **Figure 22**), the humanitarianism frame did not affect issue attitude compared to situations without frames regardless of whether the counter-argument of additional costs was weak (p = .29) or strong (p = .83).

Regarding the question of the stability of framing effects according to citizens' political value preference (RQ2), the full ANOVA model in **Subchapter 5.1.1** provided first insights. The two respective two-way interactions concerned with the effects of salience emphasis frames according to respondents' value preference were insignificant in this model (p = .486 and p = .482, see **Table 49**), indicating that the main effect of frames did not vary by participants' value preference. Further decomposing these interactions with a simple effects analysis (see **Figure 24**), the results showed that the economic-individualism frame significantly reduced (p < .001, d = .48) support for the approval (M = -0.73, SD = 1.56) compared to the no frame condition (M = -0.04, SD = 1.34) and compared to the counter-frame humanitarianism (p < .001, d = .57, M = 0.12, SD = 1.39) for respondents with a high preference for economic-individualism (i.e., for people for whom the frame economic-individualism was value-resonant).

Likewise, the same effects occurred for participants with a low preference for economic-individualism, i.e., for respondents for whom the frame economic-individualism was non-resonant. When these participants were exposed to the non-resonant frame economic-individualism (M = -0.41, SD = 1.49), they supported the approval significantly less (p < .001, d = .62) than when no frame was present (M = 0.45, SD = 1.26) or when the value-resonant frame humanitarianism was displayed (p < .001, d = .77, M = 0.62, SD = 1.19). Given these results, the answer to research question RQ2 is that the economic-individualism frame not only exerted effects on issue attitude when this salience emphasis

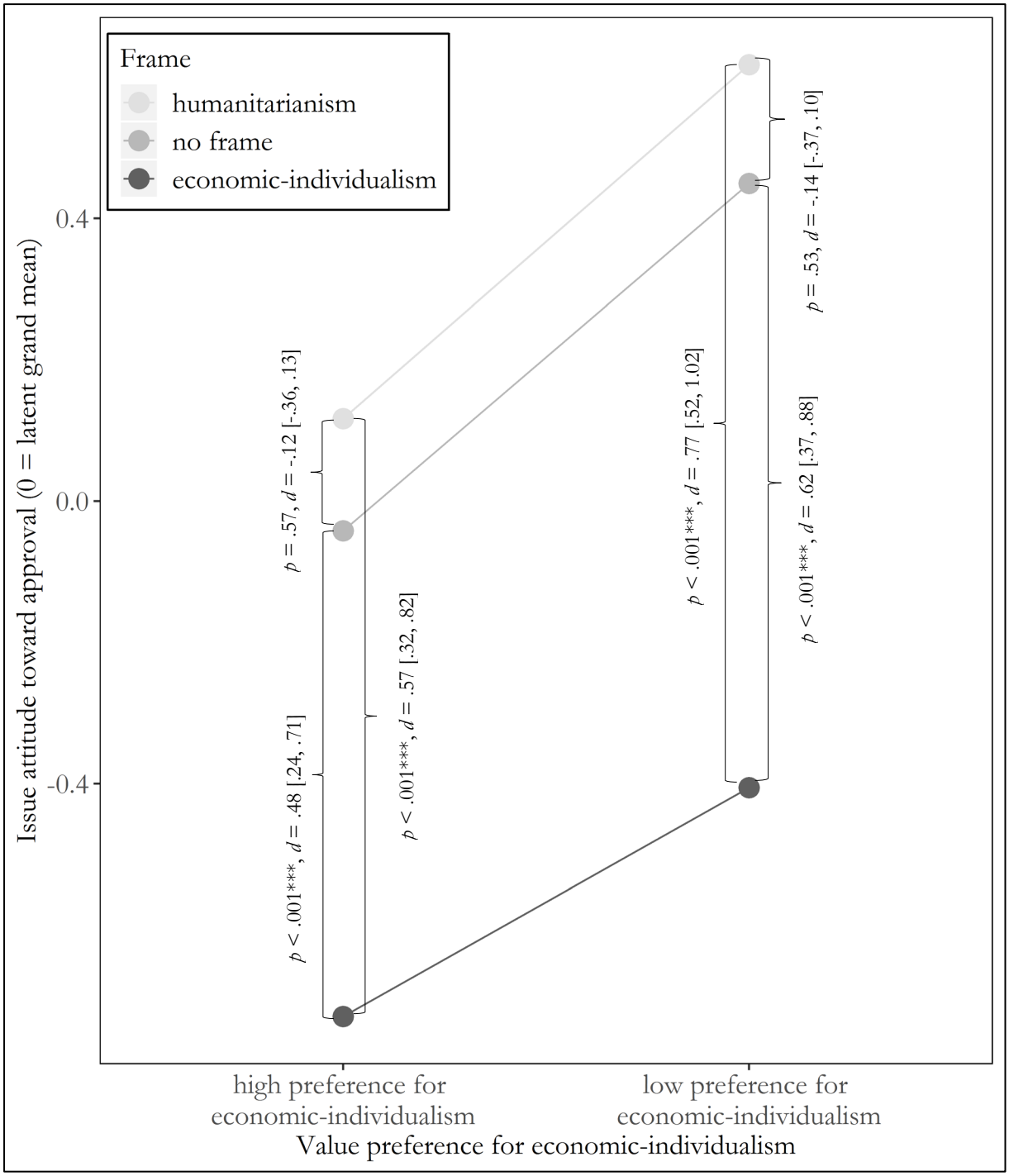
frame was value-resonant, but also when this frame was non-resonant. In contrast, the humanitarianism frame had no effects compared to situations without frames, regardless of whether this frame was value-resonant (p = .53) or non-resonant (p = .57).

Figure 23. Simple effects of salience emphasis frames on issue attitude by issue-specific argument strength



Note. *** p < .001, two-tailed simple effects tests with Tukey's correction of p-values for multiple comparisons, 95% confidence interval for Cohen's d in brackets, n = 833

Figure 24. Simple effects of salience emphasis frames on issue attitude by citizens' political value preference



Note. *** $p < .001$, two-tailed simple effects tests with Tukey's correction of p-values for multiple comparisons, 95% confidence interval for Cohen's d in brackets, $n = 833$

Interpretation of results for RQ1 and RQ2

The results for both research questions indicate that citizens' rationality in attitude formation was violated under framing conditions. The first violation is that the economic-individualism frame influenced participants' issue attitude despite its reliance on weak issue-

specific argument strength (RQ1). This implies that even substantive thematic information against the direction of the frame, which should guide rational attitude formation based on factual issue-specific argument strength, did not prevent a biased issue interpretation along the frame contextualization. This was despite that this contextualization did not provide any new issue-specific facts people did not already have in mind about the topic, and thus, did not change the informational basis for attitude formation. This counters the idea of fully rational attitude formation, because citizens' attitude not only varies arbitrarily when substantive thematic information is framed differently (see the results for H2 and H3 in **Subchapter 5.1.2**), but also when thematic information provides compelling reasons to not bias one's attitude in the direction of the salience emphasis frame. This is when a weak issue-specific argument for an attitude in accordance with the frame is accompanied by a persuasive issue-specific argument for the opposite attitude direction.

Interestingly, the effect of the economic-individualism frame was descriptively somewhat stronger when contextualizing the weak issue-specific argument for the attitude suggested by the frame ($d_{\text{compared to no frame}} = .64$, $d_{\text{compared to counter-frame}} = .86$, see **Figure 23**) than for the strong argument for this attitude ($d_{\text{compared to no frame}} = .45$, $d_{\text{compared to counter-frame}} = .57$). However, as the respective two-way interactions between salience emphasis frames and issue-specific argument strength were clearly not significant ($p_{\text{compared to no frame}} = .549$ and $p_{\text{compared to counter-frame}} = .215$, see **Subchapter 5.1.1**), these descriptive differences in effect sizes should not be overestimated. Rather, this slightly stronger effect should be considered a robust indicator for the effectiveness of the frame even when it contextualizes only weak issue-specific arguments for its issue position. Still, the formal answer to RQ1 is that frames influence citizens' issue attitudes regardless of the issue-specific argument strength the salience emphasis frame contextualizes. This is evident as the economic-individualism frame affected citizens issue attitude when contextualizing the weak and when contextualizing the strong issue-specific argument for its issue-position.

At least at the descriptive level, this pattern of the independence of the frame effect also emerged for the non-significant effect of the humanitarianism frame (see **Figure 23**). However, these differences should be interpreted with caution. First, this frame is not very suitable to answer RQ1, because it only contextualized a constant issue-specific argument in the experiment (i.e., the constant increase of efficacy of the new therapy). Thus, the same descriptive pattern of this frame "effect" for the weak and the strong counter-argument concerned with the costs of the new therapy could have simply resulted from the constant issue-specific argument of the increased efficacy of the new therapy the humanitarianism frame emphasized. Second, both descriptive differences are insignificant and thus not interpretable as effects (as already was the case for the overall effect of this frame compared to situations without frames, see **Subchapter 5.1.2**). Thus, RQ1 is answered based only on the results concerned with the effects of the economic-individualism frame depending on the contextualized varying issue-specific argument strength for the issue position of this frame. Here, it is clear that this salience emphasis frame was effective regardless of issue-specific argument strength.

The second violation of rationality in attitude formation is the effectiveness of the economic-individualism frame, even for citizens with a low preference for this political value, i.e., when this frame was non-resonant (RQ2). While the effects of a value-resonant frame on issue attitude should be interpreted as biased, they do not necessarily indicate irrationality, because following a value-resonant frame is not an arbitrary shift in attitude but an adoption of a suggested attitude aligned with one's own political preferences. In contrast, the effects of a non-resonant frame are a strong indicator for less rational attitude formation under framing conditions (also see **Subchapter 2.5.4**).

Across all conditions, citizens with a low preference for economic-individualism rather support the approval of the new and more expensive therapy ($M = 0.24$ equating to about $M = 4.52$ on the original scale ranging from 1 to 6, see **Subchapter 5.1.2**), because their value preference is to disagree with the importance of individual financial responsibility in social welfare (see **Subchapter 4.3.5**). That is, the attitude aligned with their preference should rather clearly support the approval if attitude formation is biased but at least rational in terms of being consistent with personal preferences.

However, when the non-resonant frame economic-individualism contextualizes the thematic information for these citizens, participants demonstrate significantly less support for the approval of the new therapy than when no frame or the humanitarianism frame is present. This means that the non-resonant frame moved these citizens away from their preference of supporting the approval (see **Figure 24**). This indicates bounded rational attitude formation, because it is an arbitrary shift in issue attitude that cannot even be explained by shifts that are biased but at least aligned with personal preferences.

An important constraint to this conclusion of bounded rationality is that this pattern of effective non-resonant frames only occurred for the economic-individualism frame, but not for the humanitarianism frame. The latter was not effective compared to situations without an explicit frame, despite that the descriptive pattern shows that this frame elicited (small) attitudinal differences of a comparable size regardless of citizens' value preference (see **Figure 24**). Thus, the most suitable answer to RQ2 is that salience emphasis frames can have effects on citizens for whom the political value employed by the salience emphasis frame is non-resonant. However, frames do not always have such effects and thus, framing does not always threaten rational attitude formation (for the same conclusion on aggregate for all citizens, see also H2 in **Subchapter 5.1.2**).

In sum, this subchapter demonstrated that salience emphasis frames can influence citizens' issue attitude even when contextualizing a weak issue-specific argument strength for the position of the frame (RQ1) and when contextualizing thematic information by using a non-resonant political value (RQ2). This indicates that citizens can be susceptible to salience emphasis frames in situations in which other factors such as weak issue-specific argument strength or a non-matching political value preference should help prevent the effectiveness of frames.

However, a significant influence of issue-specific argument strength and of citizens' political value preference was still found across all conditions (see results for H1 and H4 in

Subchapter 5.1.2). This implies that frames do not determine alone how attitude formation takes place. Nevertheless, the next subchapter analyzes whether salience emphasis frames are even able to suppress the effect of issue-specific argument strength in certain situations, which would be an even stronger indicator for citizens' susceptibility to emphasis framing effects than the results presented thus far (see **Subchapter 5.1.4**).

5.1.4 Suppression of the effects of issue-specific argument strength through value-resonant salience emphasis frames (H5 and H6)

Subchapter 5.1.3 showed that the economic-individualism frame influenced citizens' issue attitudes, regardless of the issue-specific argument strength it contextualized. In other words, argument strength did not influence the effect of the salience emphasis frame. In contrast, hypotheses H5 and H6 focused on the question of whether the frame effect influenced the effect of issue-specific argument strength, compared once to situations without frames (H5) and once to those with the counter-frame humanitarianism (H6). Specifically, H5 and H6 proposed that the effect of the economic-individualism frame suppresses the effect of issue-specific argument strength when this frame is value-resonant, i.e., for participants who prefer economic-individualism.

Statistical results

The first test of these hypotheses in the full ANOVA model (see **Table 49** in **Subchapter 5.1.1**) revealed an insignificant three-way interaction for H5 ($p = .242$), but a significant three-way interaction for H6 ($p = .043$). However, these interaction effects must be decomposed through a simple effects analysis to determine what drives the interaction. This is because a significant three-way interaction itself only indicates that (at least) one of the effects of the three involved variables depends on the level of (at least) one other variable, but the interaction itself does not show which variable(s). To ensure the significant three-way interaction is actually the result of the hypothesized suppression effect of issue-specific argument strength through a value-resonant salience emphasis frame, three aspects are necessary.

First, no effect should be evident of argument strength for respondents with a high preference for economic-individualism when framed with the value-resonant frame economic-individualism. However, a clear and significant effect of argument strength should be revealed for participants with a high preference for economic-individualism when no frame is present (H5) and when exposed to the counter-frame humanitarianism (H6).

Note that this alone is not sufficient to confirm that value resonance is responsible for this effect. Second, participants with a low preference for economic-individualism should demonstrate a different pattern of the effect of issue-specific argument strength in the respective framing conditions, because this would indicate that the economic-individualism frame itself do not suppress the effect of argument strength. Rather, its effect in suppressing the issue-specific argument depends on whether the economic-individualism

frame is value-resonant or not. More accurately, a significant effect of thematic argument strength should emerge for participants with a low preference for economic-individualism, even though the argument is framed by the economic-individualism frame.

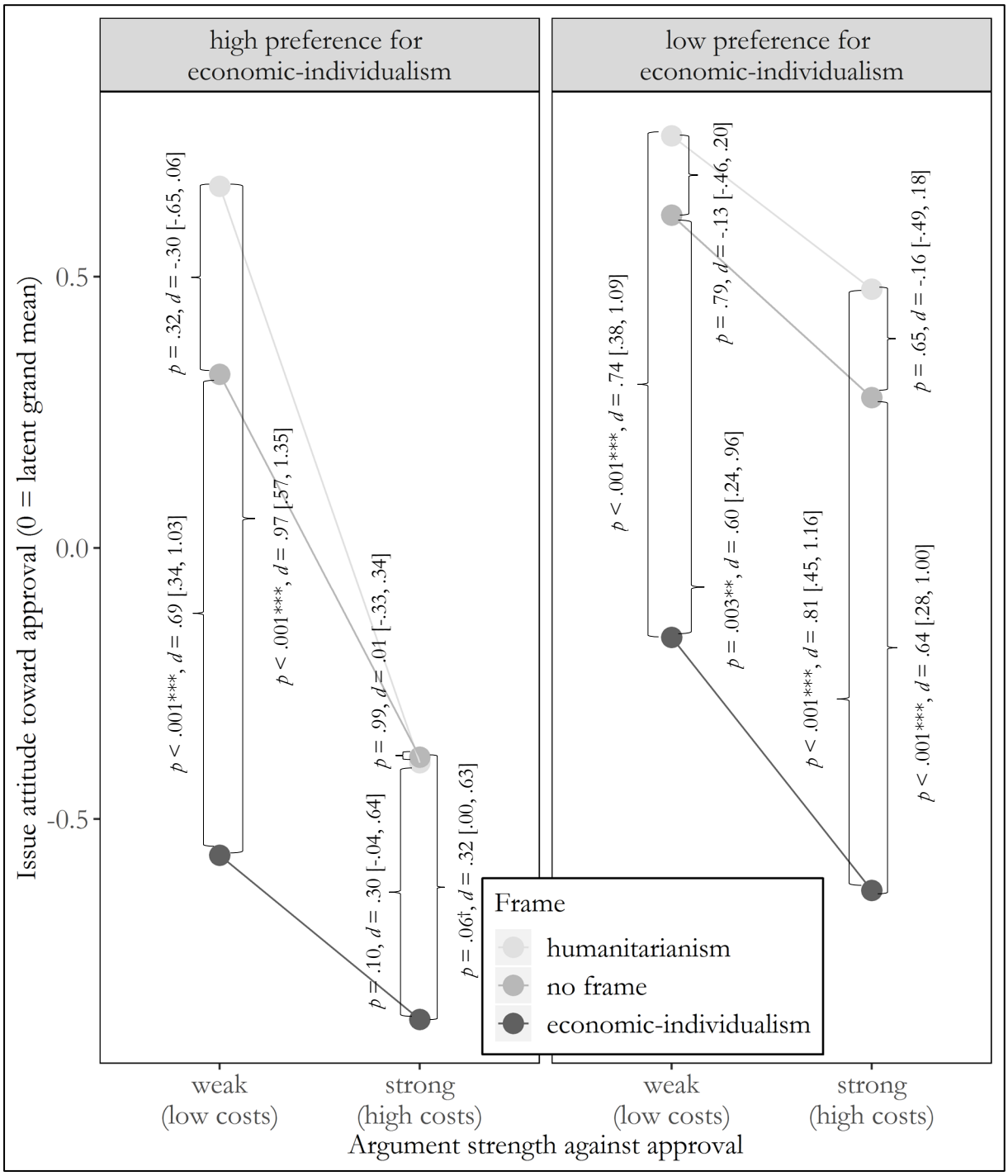
These two requirements suggest that the effect of issue-specific argument strength varies according to whether or not a value-resonant salience emphasis frame is present. However, a third requirement is necessary. Specifically, it must be confirmed for participants with a high preference for economic-individualism that the value-resonant frame economic-individualism reduced support for the approval when contextualizing the weak argument to oppose the approval compared to the situation in which no frame or a counter-frame was present. If no effect of the value-resonant frame on the weak issue-specific argument emerges, then it cannot be assumed that the suppression resulted from increasing the strength of the weak argument to oppose the approval, because the suppression could also stem from reducing the effect of the strong argument against the approval.

To investigate first this last requirement, **Figure 25** shows the simple effects of the salience emphasis frames depending on issue-specific argument strength and political value preference. The crucial comparison is the situation with weak argument strength for participants with a high preference for economic-individualism. As seen, the value-resonant frame economic-individualism significantly ($p < .001$, $d = .69$) reduced support for the approval ($M = -0.57$, $SD = 1.40$) compared to situations without frames ($M = 0.32$, $SD = 1.21$) and compared to the counter-frame humanitarianism ($p < .001$, $d = .97$, $M = 0.67$, $SD = 1.13$), both with rather strong effect sizes. As such, this requirement to support the hypothesis of a suppressed issue-specific argument effect through value-resonant frames is fulfilled, and the value-resonant frame was effective even for the weak argument.

In addition to this requirement, **Figure 25** also exhibits the frame effects for the other levels of argument strength and value preference. Without focusing on each simple effect, this analysis revealed the comparable pattern seen in **Figure 23** and **Figure 24** in **Subchapter 5.1.3**. The economic-individualism frame significantly affected issue attitude compared to the no frame condition and compared to the counter-frame humanitarianism, whereas this counter-frame did not significantly affect issue attitude compared to the no frame condition, even though the descriptive statistics were in the expected direction.

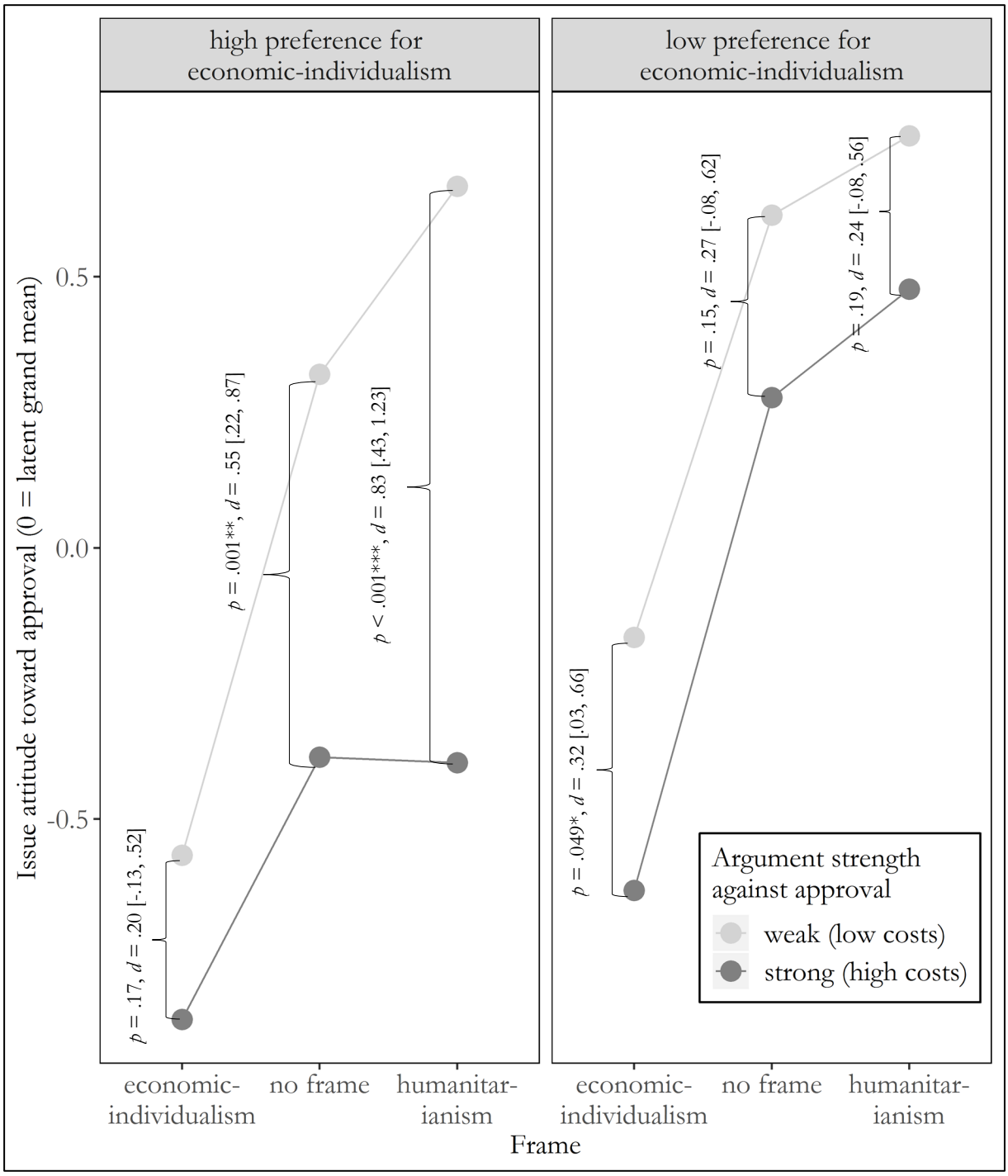
Regarding the two other requirements to support the hypothesized suppression effect of issue-specific argument strength through a value-resonant frame (H5 and H6), **Figure 26** shows the simple effect of argument strength according to the levels of frame and the levels of respondents' value preference. In the figure, the left panel shows the effects of arguments according to frame exposure when the preference for economic-individualism was high. As seen, when the value-resonant frame economic-individualism contextualized the weak ($M = -0.57$, $SD = 1.40$) or the strong argument ($M = -0.87$, $SD = 1.68$) against the approval, argument strength did not significantly affect issue attitude ($p = .17$, $d = .20$).

Figure 25. Simple effects of salience emphasis frames on issue attitude by issue-specific argument strength and political value preference



Note. * $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .1$, two-tailed simple effects tests with Tukey's correction of *p*-values for multiple comparisons, 95% confidence intervals for Cohen's *d* in brackets, $n = 833$

Figure 26. Simple effects of issue-specific argument strength on issue attitude by salience emphasis frames and political value preference



Note. * $p < .05$, ** $p < .01$, *** $p < .001$, two-tailed simple effects tests, 95% confidence interval for Cohen's d in brackets, $n = 833$

In contrast, clear and strong issue-specific argument effects were evident for participants with a high preference for economic individualism when no frame was present ($M_{weak} = 0.32$, $SD_{weak} = 1.21$, $M_{strong} = -0.39$, $SD_{strong} = 1.38$, $p < .001$, $d = .55$) and when

the thematic arguments were framed with the counter-frame humanitarianism (M_{weak} = 0.67, SD_{weak} = 1.13, M_{strong} = -0.40, SD_{strong} = 1.42, $p < .001$, $d = .83$).

Furthermore, the pattern of issue-specific argument effects by salience emphasis frames for citizens with a low preference for economic-individualism was reversed (see right panel in **Figure 26**). When the non-resonant frame economic-individualism contextualized the arguments, issue-specific argument strength had a significant influence (M_{weak} = -0.17, SD_{weak} = 1.44, M_{strong} = -0.63, SD_{strong} = 1.52, $p = .049$, $d = .30$), whereas argument strength did not when no frame (M_{weak} = 0.61, SD_{weak} = 1.18, M_{strong} = 0.28, SD_{strong} = 1.32, $p = .15$, $d = .27$) or the value-resonant frame humanitarianism was present (M_{weak} = 0.76, SD_{weak} = 1.10, M_{strong} = 0.48, SD_{strong} = 1.27, $p = .19$, $d = .24$).

This strongly supports the hypothesized suppression of the effect of issue-specific argument strength through value-resonant salience emphasis frames. The simple effects not only support this suppression effect in comparison to the counter-frame (H6) but also compared to the no frame condition (H5). However, the differences in the significance of issue-specific argument effects for the latter were not strong enough to yield a significant three way-interaction in the full ANOVA model ($p = .242$, see **Table 49**), but only for the former ($p = .043$). That is, the results fully support H6 and partially support H5.

Interpretation of the results for H5 and H6

These results are a strong indicator for citizens' susceptibility to value-resonant salience emphasis frames, because they imply that people simply follow "their" frame at the same magnitude, regardless of how compelling the issue-specific facts are for the issue position suggested by their frame. Moreover, the same citizens are aware of the issue-specific argument strength of thematic information as long as this is presented without additional explicit framing (H5) or when another (non-resonant) frame contextualizes the information (H6). That is, value-resonant frames can prevent that the relevant thematic facts and issue-specific argument strength for one's own side are sufficiently considered. This occurs despite that citizens are not generally unable to base their attitude on how compelling thematic information is, as long as external factors do not increase motivated reasoning regarding this information (for empirical support, see the effect of issue-specific argument strength for citizens with a high preference for economic-individualism when no frames are present in **Figure 26**, and **Subchapter 2.8.3** for the theoretical argument of increased motivated reasoning due to value-resonant salience emphasis frames).

How rational should this suppression of the effect of issue-specific argument strength be judged? First, the results suggest that citizens ignore the persuasive strength of fundamental facts about the issue, which does not indicate very rational attitude formation that should also incorporate the relevant thematic information about a specific topic. In contrast, value-resonant salience emphasis frames lead to a highly biased interpretation of this thematic information along one's own value preferences.

Still, it could be argued that this must not necessarily be irrational, because this bias implies a certain degree of consistency with one's own preferences. As such, the value-

resonant frame helps citizens interpret thematic information so that one's specific issue attitude does not violate one's general value preference. That is, it could be argued that the effect of the value-resonant frame is rather an indicator for increased rationality, because it shows that citizens rely more on their political value to interpret thematic information than when this frame is missing. For instance, it could be concluded that the economic-individualism frame helped citizens holding this value to judge the low costs for the new therapy as a threat to their value preference, but they were unable to understand the consequences of an (even small) increase in costs for their preference when no explicit frame was present.

However, the problem with this possible conclusion is that attitude formation only in accordance with one's own preferences prevents the formation of differentiated and sophisticated attitudes that also consider issue-specific argument strength of thematic information. Dismissing argument strength and simply following preferred political values impedes deliberating the substantive content of topics and thus, it reduces the accuracy of attitude formation.

In fact, the results show that citizens in favor of economic-individualism no longer differentiated between the different cost amounts when framed in terms of a general threat to their value preference, even though the weak issue-specific argument contained costs 30 times lower than those in the strong argument. An increase of CHF 10 in personal insurance rates no longer differed from an increase of CHF 300, but led to the same relatively strong opposition to the approval of the new therapy. Moreover, this resulted from the stronger effect of the value-resonant frame when contextualizing the weak issue-specific argument rather than the strong argument (see left panel in **Figure 25**). Here, citizens needed to engage in stronger motivated reasoning about argument strength to arrive at an attitude aligned with their value preference made more salient by the value-resonant frame. Notably, these citizens considered the difference in issue-specific argument strength and followed the weak argument significantly less than the strong argument when no frames were present or the counter-frame humanitarianism was used (see **Figure 26**).

Given that rationality also means forming the same attitude when substantive information is the same (i.e., relying always at the same magnitude on issue-specific argument strength), this inconsistency in the effect of argument strength induced by framing clearly violates the idea of the rational evaluation of thematic information. Thus, while it might be rational to a certain extent to interpret issue-specific arguments according to one's own value preferences, rationality is violated when the degree of biased processing along these preferences increases so strongly because of value-resonant framing that it changes the effect of issue-specific argument strength. This is even more so when frames completely blind citizens to substantive thematic information, impeding accurate and rational attitude formation.

In sum, this subchapter revealed that value-resonant salience emphasis frames can increase motivated reasoning about the substantive thematic information so strongly that the effect of issue-specific argument strength is suppressed. This is despite that argument

strength can influence issue attitude as long as no frame is present or a non-resonant counter-frame contextualizes thematic information. However, the bias with which citizens process framed messages along their value preferences should not only be influenced by the value resonance of salience emphasis frames, but also by message congruence, which could decrease motivated reasoning and play a counter-part in the irrationality in attitude formation elicited by a value-resonant frame. **Subchapter 5.1.5** delves into this influence.

5.1.5 Varying importance of citizens' political value preferences for attitude formation (H7)

Thus far, the three-way interactions were analyzed in **Subchapter 5.1.4** in only two directions to investigate the suppression of the effect of issue-specific argument strength through value-resonant framing (H5 and H6). These were the stable influences of salience emphasis frames depending on issue-specific argument strength and value preference (see **Figure 25**) and the varying influence of argument strength depending on the frame and value preference (see **Figure 26**). However, to test hypothesis H7, the three-way interaction can also be examined in terms of the varying influence of value preference depending on issue-specific argument strength and salience emphasis frames.

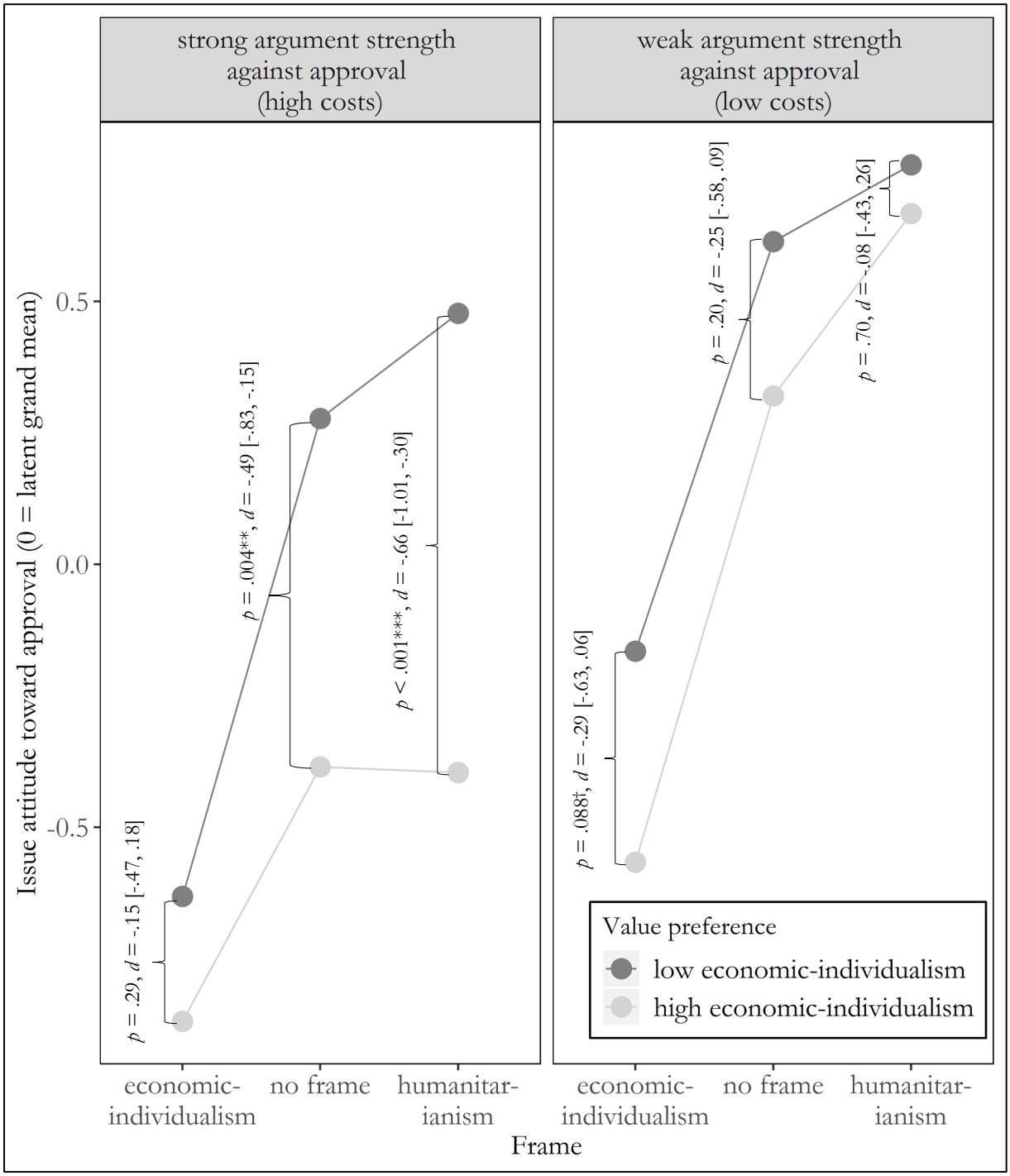
This hypothesis H7 proposed that the influence of citizens' political value preference on attitude formation increases when frames and argument strength are incongruent in a message (e.g., when issue-specific argument strength against approval is high, but a humanitarian frame suggesting supporting the approval contextualizes this argument) compared to when both are congruent (e.g., when issue-specific argument strength against approval is high and contextualized by the economic-individualism frame suggesting opposing approval).

Statistical results

The last three-way interaction in the full ANOVA model simultaneously tested H6 and H7, because it tested the varying effects of the three independent variables when only examining situations when (different) salience emphasis frames are present. The interaction excluded situations without framing in which argument strength and frames cannot be congruent, because there is no frame. As mentioned, this three-way interaction was significant at $p = .043$ with $\eta_p^2 = .005$ (see **Table 49** in **Subchapter 5.1.1**), indicating that the effect of value preference might differ.

However, the previous subchapter showed that the effect of issue-specific argument strength also differed when considering the simple effects, whereas frame effects did not differ. Thus, based only on the significant three-way interaction, it cannot simply be assumed that value preference differed according to argument strength and frames. To test H7 in a valid way, a further simple effects analysis must be performed to decompose the effect of value preference.

Figure 27. Simple effects of political value preference on issue attitude by issue-specific argument strength and salience emphasis frames



Note. * $p < .05$, ** $p < .01$, *** $p < .001$, † $p < .1$, two-tailed simple effects tests, 95% confidence interval for Cohen's d in brackets, $n = 833$

Figure 27 shows the results of this analysis for two situations in which salience emphasis frames and issue-specific argument strength were congruent in the message and two situations in which they were incongruent. Regarding the congruent situations, when the strong issue-specific argument against approval was framed with the economic-

individualism frame, no significant effect of value preference was found (p = .29), and the attitude of participants with a high preference for economic-individualism (M = -0.87, SD = 1.68) did not differ from respondents with a low preference (M = -0.63, SD = 1.52). Likewise, when the humanitarianism frame contextualized the weak issue-specific argument against approval, there was no significant difference (p = .70) between participants holding the value of economic-individualism (M = 0.67, SD = 1.13) and respondents opposing it (M = 0.76, SD = 1.10). Therefore, when salience emphasis frames and argument strength were congruent, value preferences were ineffective in influencing attitude formation.

In contrast, in incongruent situations, value preference had a significant influence. When the strong issue-specific argument against approval was framed in terms of humanitarianism, participants with a high preference for economic-individualism opposed the approval (M = -0.40, SD = 1.42) significantly stronger (p < .001, d = -.66) than did respondents with a low preference (M = 0.48, SD = 1.27). Similarly, participants with a high preference showed less support for the approval (M = -0.57, SD = 1.40) than respondents with a low preference (M = -0.17, SD = 1.44) when the humanitarianism frame contextualized the weak argument against approval, although this was only marginally significant (p = .088, d = -.29). Nevertheless, both results for incongruent situations imply that citizens rely on their political value preference to form their issue attitude.

These results formally support hypothesis H7. The influence of citizens' value preference on attitude formation varies and is significantly stronger in situations in which issue-specific argument strength and frames are incongruent. In contrast, value preference has no effect when both message properties are congruent, regardless of whether this congruence points to opposing or supporting the approval.

Interpretation of results for H7

Given the support for H7, it can be concluded that attitude formation under framing conditions is not always biased along citizens' political value preferences, despite the strong evidence presented in the previous **Subchapter 5.1.4** that value-resonant framing can increase motivated reasoning about weak issue-specific arguments for the issue position of the value-resonant frame. In contrast, the results in this subchapter revealed that frames can also contribute to reducing motivated reasoning, as long as frames contextualize high issue-specific argument strength for its issue position, i.e., when the message congruently points to one direction.

When the economic-individualism frame contextualized the strong issue-specific argument against the approval, citizens with a low-preference for this political value – i.e., citizens for whom this frame was non-resonant – rather opposed the approval at the same magnitude as citizens with a high preference for economic-individualism, who received their value-resonant frame (see **Figure 27**). For both preferences, a compelling congruent message elicited no need for strong motivated reasoning, because no stark conflict existed between the different message features that needed to be reduced by interpreting the message along one's preferences to regain cognitive consistency (see **Subchapter 2.8.3**).

That is, applying the congruent frame economic-individualism to the strong issue-specific argument against the approval helped citizens with a low preference for economic-individualism (who show across all conditions a tendency to support the approval, see the significant main effect for H4) recognize that compelling issue-specific arguments do not follow their default attitude (i.e., supporting the approval). Message congruence helped them adopt an attitude based on the substantial thematic information provided, and their attitude did not differ from the attitude of citizens adhering strongly to economic-individualism.

In contrast, when the humanitarianism frame contextualized the strong argument against the approval – i.e., when the message was incongruent and the thematic information had weak argument strength for the issue position of the humanitarianism frame that suggested supporting the approval – citizens engaged in motivated reasoning to reduce the cognitive conflict this incongruence elicited. This then polarized the attitudes of citizens with different political values. Citizens with a high preference for economic-individualism still followed the strength of the issue-specific argument despite exposure to the humanitarian frame, as this allowed them to form an attitude aligned with their default attitude on social welfare, namely rather opposing increasing costs. In contrast, citizens with a low preference for economic-individualism rather followed the humanitarianism frame in incongruent situations, despite the strong issue-specific argument to oppose the approval. This is because their value-resonant frame humanitarianism suppressed the effect of issue-specific argument strength (see **Subchapter 5.1.4**) to enable these citizens to form an attitude aligned with their value of opposing financial constraints in social welfare.

As such, message incongruence increased the biased processing of thematic information along political value preferences, whereas congruence decreased the influence of citizens' political value preference on attitude formation and enabled a more rational and accurate evaluation of the argument strength of thematic information. In other words, when a salience emphasis frame contextualizes thematic information with high issue-specific argument strength for the issue position of the frame, then frames can foster more rational attitude formation based on substantive thematic information for citizens that would not follow the stronger issue-specific argument when no congruent frame is present. Without a congruent frame, strong thematic arguments against citizens' default attitude direction based on their political value preference would be less likely accepted. That is, frames can also lead to a more rational assessment of issue-specific argument strength by citizens not in favor of the general direction of this argument as long as a (non-resonant) salience emphasis frame contextualizes a strong thematic argument for its issue position. However, when issue-specific argument strength is weak for the issue position of the (resonant or non-resonant) frame – i.e., when a message is incongruent – attitudes become increasingly polarized because the effect of issue-specific argument strength is suppressed for citizens for whom the frame is value-resonant (see **Subchapter 5.1.4** before).

The results supporting H7 highlighted an important counter-part to citizens' bounded rationality in attitude formation under the framing conditions described in

preceding subchapters. This subchapter clarified that salience emphasis frames can also help increase rationality, although only under very specific conditions. Before summarizing the results generated thus far (see **Subchapter 5.1.7**), the next subchapter (see **Subchapter 5.1.6**) provides several robustness checks to ensure the stability thereof.

5.1.6 Robustness checks

The results for the effects of issue-specific argument strength, salience emphasis frames, and citizens' political value preference have thus far supported all hypotheses, except for H5, which they only partially supported. To secure these findings and challenge the hypotheses even further, this subchapter describes several robustness checks. Specifically, the entire analysis was re-run as an ANCOVA. The same model as the ANOVA in **Subchapter 5.1.1** was employed, but expanded to include all 16 control variables measured in this study (see **Subchapter 4.3.2**): age, sex, education, income, need for cognitive closure, need for cognition, involvement in reading the stimulus article, involvement in thinking about the issue of the news article, centrality of social welfare attitudes, numeracy, political knowledge, political leaning, affectedness by a serious illness – self, affectedness by a serious illness – strong ties, affectedness by a serious illness – weak ties, and previous topic interest.

Integrating these control variables in an ANCOVA allows to partial out their direct influence on issue attitude before assessing the effect of the experimental factors, eliminating possible confounds that (co-)influence the effects of the experimental manipulation (Field et al., 2012, pp. 704–707). This can be a more robust test of the hypotheses. Furthermore, the effects of the control variables themselves help better understand what drives attitude formation other than issue-specific argument strength, salience emphasis frames, and political value preferences.

Table 50 shows the results of the ANCOVA model, revealing that the significance values (p-values) and effect sizes (η_p^2) of the independent variables of argument strength, frames, and value preference and their interactions were nearly similar to those in the first ANOVA without covariates. That is, even after controlling for the 16 control variables, the significant effects of issue-specific argument strength (H1), of the economic-individualism frame compared to the no frame condition (H2) and compared to the counter-frame humanitarianism (H3), and of citizens' political value preference (H4) persisted.

Moreover, all two-way interactions (RQ1 and RQ2) and the three-way interaction for the suppression of the effects of issue-specific argument strength through a value-resonant frame compared to the no frame condition (H5) remained insignificant. However, the second three-way interaction concerned with the suppression compared to a non-resonant frame (H6) not only remained significant but demonstrated even higher statistical significance ($p = .004$) and a stronger effect size ($\eta_p^2 = .012$) than in the initial ANOVA model ($p = .043$, $\eta_p^2 = .005$, see **Subchapter 5.1.1**). This indicates that the results of the initial ANOVA were robust, even after controlling for all covariates, strengthening support for the hypotheses.

Table 50. ANCOVA of between-subjects effects of issue-specific argument strength, salience emphasis frames, political value preference (dichotomized), their interactions, and all control variables on issue attitude

Factor	*df*	*F*	η_p^2	*p*
Adjusted model	27	6.86	.221	< .001***
CV age	1	12.13	.018	< .001***
CV sex (men = 1)	1	0.25	< .001	.618
CV education (high = 1)	1	0.98	.001	.323
CV income	1	0.99	.001	.321
CV need for closure	1	17.90	.027	< .001***
CV need for cognition	1	1.42	.002	.234
CV involvement reading	1	1.42	.002	.233
CV involvement thinking	1	4.73	.007	.030*
CV centrality of social welfare attitudes	1	2.05	.003	.152
CV numeracy	1	0.50	< .001	.479
CV political knowledge	1	0.21	< .001	.646
CV political leaning	1	0.55	< .001	.459
CV affectedness by serious illness – self (yes = 1)	1	6.03	.009	.014*
CV affectedness by serious illness – strong ties (yes = 1)	1	.00	< .001	.956
CV affectedness by serious illness – weak ties (yes = 1)	1	.03	< .001	.860
CV topic interest	1	6.56	.010	.009**
Argument strength	1	25.66	.038	< .001***
Frame economic-individualism vs. no frame	1	25.76	.038	< .001***
Frame economic-individualism vs. humanitarianism	1	42.98	.062	< .001***
Value preference for economic-individualism	1	18.57	.028	< .001***
Argument strength X frame economic-individualism vs. no frame	1	0.34	< .001	.562
Argument strength X frame economic-individualism vs. humanitarianism	1	1.57	.002	.210
Argument strength X value preference for economic-individualism	1	1.10	.002	.295
Frame economic-individualism vs. no frame X value preference for economic-individualism	1	0.82	.001	.365
Frame economic-individualism vs. humanitarianism X value preference for economic-individualism	1	1.94	.003	.164
Argument strength X frame economic-individualism vs. no frame X value preference for economic-individualism	1	0.76	.001	.385
Argument strength X frame economic-individualism vs. humanitarianism X value preference for economic-individualism	1	4.13	.012	.004**

Note. R^2 = .221, $R^2_{adjusted}$ = .189, * $p < .05$, ** $p < .01$, *** $p < .001$, CV = control variable, n = 678 (lower n due to missing values for control variables)

In addition to the stability of the hypothesized effects, **Table 50** also provides information on the influences of the added control variables on issue attitude toward approval of the new therapy against cancer. Of the demographic variables age, sex, education, and income, only age significantly predicted issue attitude. Older people tended to oppose the approval more strongly than younger respondents (b = -0.014, p < .001).

Possibly, older people need the help of the health insurance system more than younger ones. Thus, the older may have perceived the possible approval as a distribution conflict between financial resources in the health system to cure their own diseases and the financial resources the same system would have to spend for the approval of the new therapy, which would help others but not them. Thus, they may oppose the approval more strongly to ensure the health services they need for themselves can be financed.

However, the significant control variable of affectedness by serious illness (self) suggests that when respondents suffer(ed) from a serious illness such as cancer, their support for the approval was significantly stronger, regardless of age (b = 0.363, p = .014), than that of those not affected by such illnesses. Unsurprisingly, people who suffer(ed) from cancer generally exhibit more solidarity with others with a comparable disease and are more willing to support the approval. In addition, previous interest in the topic of health insurances significantly increased support for approval (b = 0.093, p = .009).

Of the other control variables, only two significantly influenced issue attitude: need for cognitive closure (b = 0.240, p < .001) and involvement in thinking about the issue of the news article (b = -0.086, p = .030). Respondents with a high need for cognitive closure search for (fast) answers to problems (Webster & Kruglanski, 1994). For them, simply supporting the approval of the more effective therapy despite counter-arguments regarding the additional financial expenses was likely the easiest way to cope with the question about their issue attitude.

This explanation is corroborated by the significant but negative influence of involvement in thinking, implying that people who thought less extensively about the approval supported it more strongly. However, the explanatory power of all control variables together accounted for only about 5% of the variance compared to the about 13% explained by the (quasi-)experimental factors ($R^2_{adjusted}$ = .135 in the ANOVA without covariates, $R^2_{adjusted}$ = .189 in the ANCOVA with covariates). That is, the influences of the hypothesized communicative effects and of the political value preferences were more important in attitude formation than demographics or personality variables.

Regarding the robustness of the hypothesized effects, the ANCOVA in **Table 50** only added control variables to the model, but still relied on the dichotomized variable for value preference based on the median split to estimate the influence of citizens' political value preference for economic-individualism in attitude formation (see **Subchapter 4.3.5**). This dichotomization helped follow the experimental paradigm of comparing different groups, and eased interpretation of the interaction effects. However, dichotomization can negatively influence the correct estimation of significance and effect sizes. Thus, it is

recommended to use metric variables in the statistical model when possible (MacCallum, Zhang, Preacher, & Rucker, 2002).

Thus, the second robustness check in **Table 51** used the metric latent measurement for value preference, not the dichotomized variable, as a quasi-experimental factor in a second ANCOVA model. All other variables were the same as in the first ANCOVA. The levels of significance and effect sizes in this new ANCOVA (see **Table 51**) were very similar to those in the initial ANOVA model (see **Subchapter 5.1.1**), again supporting all hypotheses except H5. Unsurprisingly, the influences of the covariates were also the same as in the first ANCOVA. However, the model differed from the first ANOVA model in one important aspect. While the two-way interaction between issue-specific argument strength and political value preference was insignificant in the initial ANOVA using the dichotomized variable for value preference ($p = .081$), the same interaction was significant when using the metric variable ($p = .031$).

Figure 26 in **Subchapter 5.1.4** helps clarifying this interaction. The effect of issue-specific argument strength was generally stronger for participants with a high preference for economic-individualism than for respondents with a low preference for this value (except when the frame was value-resonant, supporting H5 and H6). This pattern, albeit with an insignificant interaction, was already present when analyzing only the groups without frames in the manipulation check for issue-specific argument strength (see **Subchapter 4.4.3**). As explained in the interpretation of the results of the manipulation check, citizens with a lower preference for economic-individualism generally care less about financial expenditures connected to social welfare. Thus, these people were less sensitive to the differing costs that constituted the varying issue-specific argument strength for opposing the approval. However, the experiment focused on citizens with a high preference for economic-individualism, because the design only enabled testing this group for the suppression of issue-specific argument effects through a value-resonant frame (see **Subchapter 4.2.4**).

As indicated by the still significant three-way interaction in the ANCOVA model with the metric variable for the preference for economic-individualism ($p = .038$, see last line in **Table 51**), the hypothesized suppression of this argument effect when participants with a higher preference for economic-individualism were exposed to the value-resonant frame economic-individualism compared to the counter-frame humanitarianism (H6) persisted in this robustness check. Thus, the generally lower effect of issue-specific argument strength for citizens with a low preference for economic-individualism, as indicated by the now significant two-way interaction when using the metric variable for value preference, did not contradict the evidence for the hypotheses presented thus far. Instead, the additional ANCOVA confirms the robustness of the results.

Table 51. ANCOVA of between-subjects effects of issue-specific argument strength, salience emphasis frames, political value preference (metric), their interactions, and all control variables on issue attitude

Factor	*df*	*F*	η_p^2	*p*
Adjusted model	27	8.22	.254	< .001***
CV age	1	10.93	.016	< .001***
CV sex (men = 1)	1	0.15	< .001	.700
CV education (high = 1)	1	1.72	.003	.190
CV income	1	2.23	.003	.136
CV need for closure	1	25.51	.038	< .001***
CV need for cognition	1	2.36	.004	.125
CV involvement reading	1	1.05	.002	.305
CV involvement thinking	1	4.23	.006	.040*
CV centrality of social welfare attitudes	1	1.70	.003	.193
CV numeracy	1	0.70	.001	.403
CV political knowledge	1	0.02	< .001	.880
CV political leaning	1	0.57	< .001	.449
CV affectedness by serious illness – self (yes = 1)	1	6.25	.009	.013*
CV affectedness by serious illness – strong ties (yes = 1)	1	0.05	< .001	.819
CV affectedness by serious illness – weak ties (yes = 1)	1	0.09	< .001	.769
CV topic interest	1	5.40	.008	.020*
Argument strength	1	23.15	.034	< .001***
Frame economic-individualism vs. no frame	1	22.81	.034	< .001***
Frame economic-individualism vs. humanitarianism	1	41.03	.059	< .001***
Value preference for economic-individualism	1	47.40	.068	< .001***
Argument strength X frame economic-individualism vs. no frame	1	0.37	< .001	.543
Argument strength X frame economic-individualism vs. humanitarianism	1	1.41	.002	.236
Argument strength X value preference for economic-individualism	1	4.65	.007	.031*
Frame economic-individualism vs. no frame X value preference for economic-individualism	1	0.03	< .001	.872
Frame economic-individualism vs. humanitarianism X value preference for economic-individualism	1	0.10	< .001	.754
Argument strength X frame economic-individualism vs. no frame X value preference for economic-individualism	1	0.78	< .001	.779
Argument strength X frame economic-individualism vs. humanitarianism X value preference for economic-individualism	1	4.30	.007	.038*

Note. R^2 = .254, $R^2_{adjusted}$ = .223, * p < .05, *** p < .001, CV = control variable, n = 678 (lower n due to missing values for control variables)

Thus far, the robustness checks added control variables to the initial ANOVA model in the first step (see **Table 50**), and in a second step, tested the stability of the hypothesized effects by not only including covariates but also integrating the metric latent variable for citizens' preference for economic-individualism as a quasi-experimental factor, rather than the dichotomized variable (see **Table 51**). However, all analyses used the same predicted latent variables derived from the simultaneous confirmatory factor analysis for the final measurement model. The final measurement model excluded five items to increase model fit, because the model fit of the initial measurement model employing all measured variables did not satisfy all cut-off criteria for an appropriate confirmatory factor analysis (see **Subchapter 4.3.4**). To test whether the decision to adjust the measurement model influenced the results of the hypotheses tests, **Table 52** shows a final robustness check using the predicted latent values based on the full measurement model, again integrating all 16 control variables and the metric variable for value preference, not the dichotomized variable.

The results of this last ANCOVA were highly similar to those of the previous ANCOVA and still supported all hypotheses, again except H5. Strong issue-specific arguments to oppose the approval significantly decreased support ($p < .001$, H1), as did the economic-individualism frame compared to the no frame condition ($p < .001$, H2) and compared to the counter-frame humanitarianism ($p < .001$, H3). Similarly, a higher value preference for economic-individualism led to significantly lower support ($p < .001$, H4). In addition, the three-way interaction, which tested for the suppression effect of issue-specific argument strength through value-resonant salience emphasis frames compared to a counter-frame (H6) and for the varying importance of value preferences (H7), remained significant ($p = .037$).

In sum, this subchapter described the three different robustness checks employed to test the stability of the effects found in the main ANOVA model (see **Subchapter 5.1.1**). All three robustness checks supported the results of the ANOVA, regardless of whether or not all 16 control variables were added (see **Table 50**), the metric variable for value preference was integrated as a quasi-factor instead of the dichotomized variable (see **Table 51**), and the analysis was re-run with the predicted latent variables based on a different measurement model (see **Table 52**). Therefore, the robustness of the statistical results of testing the hypotheses and research questions concerned with the dependent variable of issue attitude was confirmed, increasing the stability of the findings.

Next, **Subchapter 5.1.7** summarizes these findings and the major conclusions thereof. Thereafter, **Chapter 5.2** explores the mediation effects underlying these direct effects on issue attitude.

Table 52. ANCOVA of between-subjects effects of issue-specific argument strength, salience emphasis frames, political value preference (metric), their interactions, and all control variables on issue attitude with initial measurement model with all items

Factor	*df*	*F*	η_p^2	*p*
Adjusted model	27	8.29	.256	< .001***
CV age	1	10.79	.016	.001**
CV sex (men = 1)	1	0.12	< .001	.727
CV education (high = 1)	1	1.68	.003	.195
CV income	1	2.30	.004	.129
CV need for closure	1	27.31	.040	< .001***
CV need for cognition	1	2.35	.004	.126
CV involvement reading	1	1.05	.002	.307
CV involvement thinking	1	3.80	.006	.052
CV centrality of social welfare attitudes	1	1.54	.002	.215
CV numeracy	1	0.67	.001	.413
CV political knowledge	1	0.02	< .001	.876
CV political leaning	1	0.58	< .001	.448
CV affectedness by serious illness – self (yes = 1)	1	6.19	.009	.013*
CV affectedness by serious illness – strong ties (yes = 1)	1	0.05	< .001	.819
CV affectedness by serious illness – weak ties (yes = 1)	1	0.08	< .001	.773
CV topic interest	1	5.21	.008	.023*
Argument strength	1	23.10	.034	< .001***
Frame economic-individualism vs. no frame	1	23.10	.034	< .001***
Frame economic-individualism vs. humanitarianism	1	41.12	.059	< .001***
Value preference for economic-individualism	1	48.06	.069	< .001***
Argument strength X frame economic-individualism vs. no frame	1	0.39	< .001	.532
Argument strength X frame economic-individualism vs. humanitarianism	1	1.46	.002	.227
Argument strength X value preference for economic-individualism	1	4.75	.007	.030*
Frame economic-individualism vs. no frame X value preference for economic-individualism	1	0.03	< .001	.874
Frame economic-individualism vs. humanitarianism X value preference for economic-individualism	1	0.10	< .001	.751
Argument strength X frame economic-individualism vs. no frame X value preference for economic-individualism	1	0.08	< .001	.781
Argument strength X frame economic-individualism vs. humanitarianism X value preference for economic-individualism	1	4.35	.007	.037*

Note. $R^2 = .256$, $R^2_{adjusted} = .223$, * $p < .05$, ** $p < .01$, *** $p < .001$, CV = control variable, $n = 678$ (lower n due to missing values for control variables)

5.1.7 Summary

The results regarding the (interaction) effects of the three independent variables of issue-specific argument strength, salience emphasis frames, and citizens' political value preference on issue attitude presented in **Subchapter 5.1.1** to **Subchapter 5.1.5** answered the research questions RQ1 and RQ2 and mainly supported the proposed hypotheses H1 to H7, even after extensive robustness checks (see **Subchapter 5.1.6**).

Hypothesis H1 stated that issue-specific argument strength exerts an independent main effect on issue attitude across all framing conditions and both political value preferences. The empirical results support this hypothesis (see **Subchapter 5.1.2**). On aggregate, participants opposed the approval of the new therapy more strongly when its costs were high than when they were low, i.e., when issue-specific argument strength for opposing the approval was strong.

This result indicates that citizens follow issue-specific argument strength and demonstrate a certain degree of rationality in their attitude formation in the sense of relying on the persuasive strength of the facts provided for a specific political topic. However, the effect size was rather small (d = .37), indicating that substantive thematic information did not play a very prominent role in attitude formation and that additional effects of salience emphasis frames might threaten citizens' rationality in attitude formation (for a short overview of the results for H1-H7 and RQ1 and RQ2, see **Table 53**).

In fact, salience emphasis frames influenced citizens' issue attitude as an independent main effect across the levels of issue-specific argument strength and citizens' political value preference. Specifically, the economic-individualism frame significantly reduced support for the approval of the new therapy compared to situations without explicit frames (supporting H2) and compared to situations in which only the counter-frame humanitarianism contextualized the issue (supporting H3). However, the humanitarianism frame had no effect compared to situations when no explicit frame was present but only new thematic information (not supporting H2). This indicates that even though salience emphasis frames can potentially influence citizens' issue attitude, this potential does not always translate into attitudinal effects (for a more elaborate explanation, see **Subchapter 5.1.2**).

Nevertheless, the results for the economic-individualism frame, the frame of interest in the methodological design of this study (see **Subchapter 4.2.4**), are unambiguous, revealing relatively strong effects ($d_{\text{compared to no frame}}$ = .53, $d_{\text{compared to counter-frame}}$ = .69). This implies that citizens are susceptible to framing effects, even when the frames are constructed as salience emphasis frames that do not add any further issue-specific information. This result is not only important in terms of supporting the theoretical concept of unique and non-confounded emphasis framing effects (see **Chapter 2.8**), but it is also an initial sign for some irrationality in citizens' attitude formation. It indicates that citizens arbitrarily change their issue attitudes based on the presentation of salience emphasis frames despite the presence of the same substantive thematic information.

Table 53. Summary of hypotheses H1-H7 and research questions RQ1 and RQ2 concerning direct (interaction) effects on the dependent variable of issue attitude

Hypothesis /research question	Statistical result	Answer to hypothesis / research question
H1: Main effect issue-specific argument strength	Main effect significant and in expected direction	Entirely supported
H2: Main effect of salience emphasis frame compared to no frame	Main effect significant and in expected direction for economic-individualism frame but not for humanitarianism frame	Supported for frame of interest but not for counter-frame
H3: Main effect of salience emphasis frame compared to counter-frame	Main effect significant and in expected direction	Entirely supported
H4: Main effect political value preference	Main effect significant and in expected direction	Entirely supported
RQ1: Frame effect for strong and weak issue-specific argument?	Two-way interaction insignificant and simple effects show effects on both levels	Frame effect for strong and weak issue-specific argument
RQ2: Frame effect when value-resonant and non-resonant?	Two-way interaction insignificant and simple effects show effects on both levels	Frame effect when value-resonant and non-resonant
H5: Suppression of issue-specific argument effect through value-resonant frame compared to no frame	Three-way-interaction insignificant but simple effects as expected	Not supported by interaction but simple effects as hypothesized
H6: Suppression of issue-specific argument effect through value-resonant frame compared to counter-frame	Three-way-interaction significant and simple effects as expected	Entirely supported
H7: Effect of value preference when incongruent message but not when congruent message	Three-way-interaction significant and simple effects as expected	Entirely supported

Hypothesis H4 proposed that also the third variable of interest, i.e., citizens' political value preference (for economic-individualism), influenced respondents' issue attitude as an independent main effect across all experimental conditions (see **Subchapter 5.1.2**). Although the effect size was rather small (d = -.34), this result confirms the general relevance of political value preferences in attitude formation. However, while it can be to

some extent rational to interpret new thematic information under the umbrella of one's core beliefs to achieve consistent understanding of issue-specific information, it can also be problematic for the formation of rational attitudes, because the effect implies a biased processing of this information along one's own preferences.

Regarding the effects of salience emphasis frames, the first two research questions asked about the stability of such framing effects under different conditions. Research question RQ1 asked whether such frames are only effective when contextualizing strong issue-specific arguments for its issue position or also when argument strength in thematic information is weak for the position of the frame. The results revealed that the economic-individualism frame not only led to lower support of the approval of the new therapy when contextualizing the thematic information that the costs would be high for this approval (CHF 300, strong issue-specific argument), but also when contextualizing the low costs (CHF 10, weak argument). That is, weak issue-specific arguments did not prevent citizens from being susceptible to the effects of salience emphasis frames (see **Subchapter 5.1.3**). This raises stronger concerns about citizens' rationality in attitude formation than did the results on the main effect of frames (see above), because it suggests that citizens' attitude not only varies arbitrarily when different frames contextualize the same substantive information, but also when the thematic information contains only less compelling issue-specific argument strength for having an attitude aligned with the salience emphasis frame.

Research question RQ2 asked about another conditionality of salience emphasis framing effects, namely whether frames only influence issue attitude when the frame is value-resonant and matches citizens' political value preferences or also when the frame is non-resonant. Again, framing effects were persistent and the economic-individualism frame not only reduced the support of citizens with a high preference for the political value of economic-individualism, but also of citizens not adhering to this value (see **Subchapter 5.1.3**). Particularly the effects of the non-resonant frame further put into question citizens' rationality in attitude formation, as they imply that changes in attitudes due to salience emphasis frames can be so arbitrary that citizens even form attitudes against their core values, while thematic information is still the same.

However, the strongest indicators for irrationality in citizens' attitude formation under framing conditions are the results for hypotheses H5 and H6 regarding the suppression of the effect of issue-specific argument strength through value-resonant framing (see **Subchapter 5.1.4**). While the three-way interactions formally supported this suppression effect compared to situations with a counter-frame (H6), but not compared to situations without explicit framing (H5), the simple effects analysis clearly demonstrated that value-resonant frames led citizens to no longer differentiate between the weakly and strongly persuasive issue-specific facts for the issue position of their value-resonant frame. While the persuasiveness of the facts in the thematic information influenced citizens' issue attitude when there was no value-resonant frame, the value-resonant frame made the weak issue-specific argument as compelling as the strong argument. Consequently, citizens' issue attitude simply followed their value-resonant frame at the same magnitude, and they formed

the same attitude, regardless of the issue-specific argument strength of the thematic information.

However, the results for hypothesis H7 revealed that frames can at least sometimes help reduce motivated reasoning along individual political value preferences and thus, can sometimes lead to less biased processing of political messages (see **Subchapter 5.1.5**). In most conditions, citizens relied on their value preferences when interpreting thematic information and frames. However, when salience emphasis frames contextualized strong issue-specific arguments for its issue position (i.e., when the message was congruent), then even citizens for whom the frame was non-resonant accepted this issue position, following the stronger issue-specific argument even though it was against their default attitude on social welfare based on their value preference. This then suppressed the influence of value preferences, and citizens with different political preferences formed the same issue attitude based on the strong issue-specific information emphasized by the congruent frame.

In sum, these results indicate that despite the general influence of the issue-specific argument strength of new thematic information (H1), salience emphasis frames affected citizens' issue attitudes when no further issue-specific information was provided, highlighting the potential effectiveness of frames themselves (H2 and H3). These unique frame effects were relatively strong and showed a rather high degree of stability in different situations. The effects of salience emphasis frames occurred whether or not the frame contextualized issue-specific arguments that were themselves strongly or weakly persuasive for an attitude in the direction of the frame (RQ1) and regardless of citizens' political value preference (RQ2), even though value preferences also influenced citizens' issue attitude independently (H4).

Moreover, value-resonant frames that matched citizens' value preference suppressed the effect of issue-specific argument strength. Here, citizens completely ignored the weak argument strength for the issue position of their frame but simply followed this frame in the same way as when this frame contextualized strong issue-specific arguments for its issue position (H5 and H6). These results imply that salience emphasis frames can threaten rational attitude formation based on substantive thematic information, and foster the biased processing of issue-specific information. However, salience emphasis frames can sometimes help reduce motivated reasoning about thematic information along political value preferences when such frames contextualize strong issue-specific arguments for its issue position (i.e., when messages are congruent, see H7).

However, the results thus far have not focused on the exact psychological mechanisms responsible for the effects of salience emphasis frames. Thus, the next chapter "zooms" into these effects and presents a series of mediation analyses to answer the question regarding via which mechanisms frames influence citizens' issue attitudes (H8-H9 and RQ3, see **Chapter 5.2**).

5.2 Mediation analyses: The mechanisms behind salience emphasis framing effects

5.2.1 Mediation of the effects of salience emphasis frames and issue-specific argument strength via belief content change and belief importance change (H8 and H9)

The previous **Chapter 5.1** discussed the direct effects of issue-specific argument strength, salience emphasis frames, and political value preferences on issue attitude. The next subchapters "zoom" into these effects and examine via which mechanisms (i.e., mediators) the independent variables of issue-specific argument strength and salience emphasis frames affect citizens' issue attitude. That is, the explanations for these effects are investigated through mediation analyses that simultaneously tested for multiple competing mediators to determine what drives the effects of the independent variables (Hayes, 2018, pp. 149–167).

For this, the focus was on the mediators concerned with economic-individualism, because the design only varied the issue-specific argument strength connected with economic-individualism, namely the amount of additional costs an approval of the new therapy would bring about (see **Subchapter 4.2.4**). The first mediation hypothesis proposed that the effect of issue-specific argument strength for economic-individualism is mediated via belief content for economic-individualism, but not via belief importance (H8, see **Part III**). In other words, the higher costs for the new therapy in the stimuli increases the perception that the new therapy is expensive, which decreases support for approval. Furthermore, issue-specific argument strength does not affect how important respondents judge financial considerations in general when considering medical approvals (i.e., importance of the salience emphasis frame economic-individualism).

In contrast, hypothesis H9 proposes that the effect of the economic-individualism frame should work via the belief importance of economic-individualism, but not via belief content. That is, this frame first strengthens the general relevance participants attribute to financial considerations, which subsequently decreases support for approval, whereas the salience emphasis frame will not change respondents' perception of how expensive the new therapy is.

Statistical results

To analyze these two hypotheses, a structural equation mediation analysis was run in R with the package *lavaan* (Rosseel, 2012) by integrating the measurement model of the involved latent variables and using the MLR estimator, as in the confirmatory factor analysis before (see **Subchapter 4.3.4**). Because the mediation analysis builds on a multiple regression approach, it was necessary to delineate the three-level factor frame to ensure the single effects could be interpreted. Thus, the analysis used the same sum-to-zero contrasts that do not test against the grand mean but against predefined groups, as done when testing the direct effects of the independent variables on issue attitude (see **Subchapter 5.1.1**).

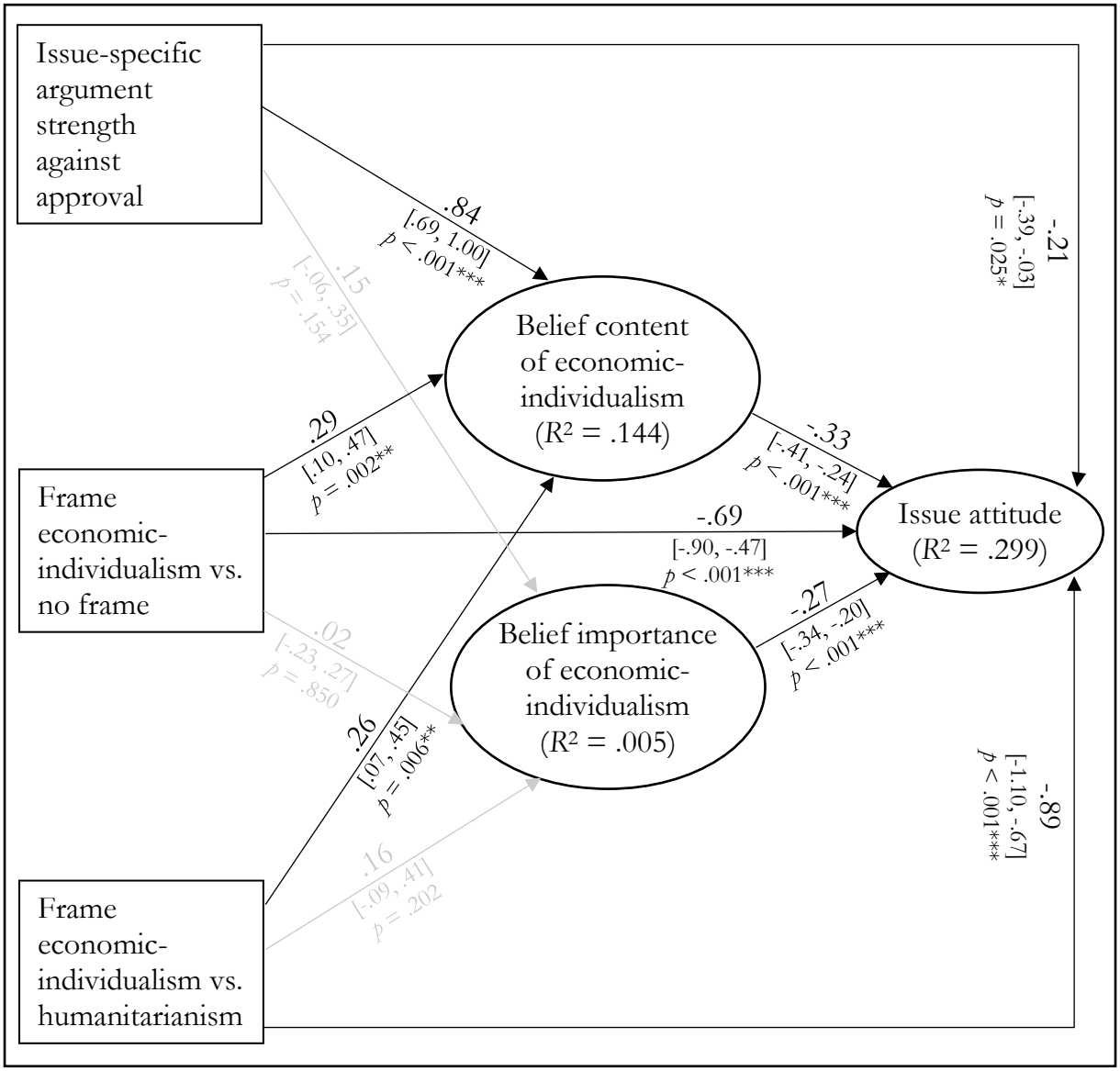
Figure 28 provides the results of this structural equation mediation analysis. The full model demonstrated a satisfactory model fit (CFI = .995, TLI = .992, RMSEA = .036, and SRMR = .018) and revealed that strong issue-specific argument strength significantly increased the belief content that the new therapy was expensive (b = .84, p < .001). In turn, higher belief content significantly reduced support for approval of the new therapy (b = -.33, p < .001). This indirect effect was significant (b = -.28, p < .001, see **Table 54**), thereby supporting H8.

In contrast, issue-specific argument strength did not affect the general belief importance of the economic-individualism frame (b = .15, p = .15), while belief importance was related to issue attitude (b = -.27, p < .001). Consequently, the indirect effect was insignificant (b = -.04, p = .16). A contrast test between these two indirect effects (see Hayes, 2018, pp. 163–166) further confirmed that the indirect effect via belief content was significantly stronger than via belief importance (b = -.24, p < .001). However, the direct effect of issue-specific argument strength on issue attitude was still significant (b = -.21, p = .025), implying that its effect was only partially mediated by the significant effect via belief content. Thus, belief content change did not completely explain why issue-specific argument strength affected issue attitude.

Contrary to hypothesis H9, the effect of the economic-individualism frame on issue attitude was not mediated by the belief importance of this political value, not compared to situations without frames (indirect effect: b = -.01, p = .85) or that with the counter-frame humanitarianism (indirect effect: b = -.04, p = .21). Instead, the effect of the salience emphasis frame was significantly mediated via belief content in comparison to the no frame (indirect effect: b = -.09, p = .005) and to the counter-frame condition (indirect effect: b = -.08, p = .010). Specifically, the economic-individualism frame led participants to perceive the new therapy as significantly more expensive ($b_{\text{compared to no frame}}$ = .29, $p_{\text{compared to no frame}}$ = .002, $b_{\text{compared to counter-frame}}$ = .26, $p_{\text{compared to counter-frame}}$ = .006). In turn, this increased belief content decreased support for approval (b = -.33, p < .001).

Furthermore, the indirect effect via belief content was significantly stronger than via belief importance for the effect of the salience emphasis frame compared to the no frame condition, as revealed in a contrast test of the two indirect effects (b = -.09, p = .027). However, also the direct effect of the frame remained significant ($b_{\text{compared to no frame}}$ = -.69, $p_{\text{compared to no frame}}$ < .001, $b_{\text{compared to counter-frame}}$ = -.89, $p_{\text{compared to counter-frame}}$ < .001), indicating that belief content only partially mediated the frame effect on issue attitude.

Figure 28. Mediation of issue-specific argument strength and salience emphasis frames on citizens' issue attitude via belief content change and belief importance change of economic-individualism



Note. Results are based on SEM using MLR estimator with n = 833, $\chi^2(df = 42) = 82.45$, CFI = .995, TLI = .992, RMSEA = .036, SRMR = .018, measurement model included but not shown for reasons of clarity, displayed are unstandardized coefficients with 95% confidence intervals in brackets, significant paths ($p < .05$) in black, insignificant paths ($p > .05$) in grey, * $p < .05$, ** $p < .01$, *** $p < .001$

Table 54. Effects of issue-specific argument strength and salience emphasis frames on citizens' issue attitude via belief content change and belief importance change of economic-individualism

Effect	Unstandardized coefficient	*SE*	95% CI	*p*
Total effect of issue-specific argument strength on issue attitude	-.52	.10	[-.71, -.33]	< .001***
Direct effect	-.21	.09	[-.39, -.03]	.025*
Indirect via belief content	-.28	.04	[-.36, -.19]	< .001***
Indirect via belief importance	-.04	.03	[-.09, .02]	.162
Contrast belief content vs. belief importance	-.24	.05	[-.33, -.14]	< .001***
Total effect of frame economic-individualism vs. no frame	-.79	.12	[-1.03, -.55]	< .001***
Direct effect	-.69	.11	[-.90, -.47]	< .001***
Indirect via belief content	-.09	.03	[-.16, -.03]	.005**
Indirect via belief importance	-.01	.03	[-.07, .06]	.850
Contrast belief content vs. belief importance	-.09	.04	[-.16, -.01]	.027*
Total effect of frame economic-individualism vs. humanitarianism	-1.02	.12	[-1.26, .77]	< .001***
Direct effect	-.89	.11	[-1.10, -.67]	< .001***
Indirect via belief content	-.08	.03	[-.15, -.02]	.010*
Indirect via belief importance	-.04	.03	[-.11, .02]	.207
Contrast belief content vs. belief importance	-.04	.04	[-.12, .04]	.295

Note. CI = 95% confidence interval for unstandardized coefficient, *SE* = standard error, * $p < .05$, ** $p < .01$, *** $p < .001$, $n = 833$

Interpretation of results for H8 and H9

Based on the results of this mediation analysis, it must be concluded that separating new thematic information and salience emphasis frames did not help to explain the contradictory findings of former (confounded) framing studies on the mediation of framing effects (see **Subchapter 2.8.4**). On one hand, at least H8 was empirically supported. Different new thematic information with varying argument strength unsurprisingly changed

the belief content for the issue, which then influenced citizens issue attitude. For instance, the information that the new therapy would lead to an increase of CHF 300 in personal insurance rates per year led to the belief content that the new therapy is more expensive than when the information stated that the increase is only CHF 10 per year, and the more expensive the therapy was judged, the less it was supported. On the other, the results provide no evidence for the mediation of salience emphasis framing effects via changes in citizens' belief importance (not supporting H9).

That is, when citizens were exposed to the economic-individualism frame, they did not rate economic considerations as a more important standard of valuation for interpreting the issue, despite that the frame explicitly stated the importance of economic considerations in interpreting the issue. In contrast, different salience emphasis frames that did not contain any further issue-specific information slightly changed belief content about the issue, thereby affecting citizens' issue attitude, albeit only as a partial mediation that did not fully explain the framing effect (see the remaining significant direct effect of the frame variables on issue attitude in **Table 54**). These results raise two relevant questions. First, why did salience emphasis frames not influence the belief importance of the employed political value in the frame? Second, why did salience emphasis frames change the content of beliefs without presenting new substantive content about the issue?

Starting with the first question, an explanation could be that the political values employed in the frames were fundamental values. Citizens demonstrate very stable preferences for these values (see **Subchapter 2.5.1**), and single exposure to a value frame might not be sufficient to change the importance of the political value, not even for the single interpretation of the specific topic. Probably, salience emphasis frames that employ less fundamental values than economic-individualism and humanitarianism can more easily work via changes in belief importance, because the personal importance of these values is less persistent and thus, can more easily be changed through the one-time reception of a single salience emphasis frame.

Interestingly, some studies that found that emphasis framing effects were mediated via belief importance change employed issue-specific frames that did not use fundamental cross-thematic political values, but specific and less established standards of reference as frames (e.g., de Vreese et al., 2011; Lecheler et al., 2009; Lecheler & de Vreese, 2012). This may have provided more room for changes in the importance of these frames, because citizens did not already have stable preferences regarding these frames. However, other studies that employed more general value emphasis frames found significant mediation effects of the frames via belief importance change (Druckman & Nelson, 2003; Nelson, 2004; Nelson, Oxley et al., 1997; Nelson & Oxley, 1999).

As such, employing value emphasis frames should not necessarily inhibit the mediation of framing effects via belief importance change. However, it is likely that the political values employed in this study impeded changes in the importance of these values as standards for interpreting the issue, because both values represent a core political cleavage in western societies (see **Subchapter 4.2.3**) and thus, are unlikely to change in

importance after single frame exposure. However, note that the salience emphasis frames employing these fundamental values were effective in changing citizens' attitude, as the strong and direct effects of the frame variables in **Figure 28** show (see also the results in **Chapter 5.1**). This mediation analysis simply revealed that a change in belief importance is not responsible for the effects of salience emphasis frames.

In contrast, the effects of salience emphasis frames were unexpectedly mediated via changes in citizens' belief content about the issue, although only slightly. Previous studies showed that emphasis frames confounded with new thematic information also influence the content citizens know about an issue (e.g., Lecheler et al., 2009; Lecheler & de Vreese, 2012). However, the theoretical idea of this study was that the effects of frames should not work via belief content change when thematic information and salience emphasis frames are disentangled as two controlled independent variables. Here, only thematic information should change belief content, as it is the only factor providing new thematic information that could change belief content (see **Subchapter 2.8.4**). Thus far, the only explanation in the literature for why emphasis frames can affect belief content is the provision of new beliefs (Lecheler & de Vreese, 2012; Slothuus, 2008). However, given that the salience emphasis frames did not contain new thematic information, this explanation does not explain the unexpected result that the frames in this study changed belief content.

Instead, it seems that salience emphasis frames more directly affect how thematic information is processed, which then changes belief content without having to provide new information. For instance, the economic-individualism frame explicitly defined the amount of additional costs as expensive, which might have changed the content citizens stored in their memory about how expensive the new therapy was compared to citizens exposed to the humanitarianism frame, which did not define the same issue-specific information about the costs as being expensive. Thus, even salience emphasis frames can alter belief content, but not because the frames add new beliefs by providing new thematic information, but because they change what citizens store in their memory as factual content about a topic by redefining the facts themselves.

However, the indirect effects of the economic-individualism frame on issue attitude via belief content change were rather small ($b_{\text{compared to no frame}} = -.09$, $b_{\text{compared to counter-frame}} = -.08$, see **Table 54**) and only partially mediated the frame effects. This implies that this explanation only partially clarifies why salience emphasis frames affect citizens' attitude. Nevertheless, this result and its explanation is on one hand problematic for hypothesis H9, which proposed that salience emphasis frames work via belief importance changes but not via changes in belief content. On the other, this result is simultaneously a first indicator that salience emphasis frames are more directly involved in the processing of thematic information itself rather than strengthening the importance of a specific frame of reference. Thus, the effects might work via the additionally proposed mediator of belief evaluation noted in research question RQ3, which is addressed in the next subchapter (see **Subchapter 5.2.2**).

Before integrating this additional mediator into the next model, the interim conclusion for the mediation processes of the effects of thematic information with varying argument strength and of salience emphasis frames is that new thematic information affects citizens' issue attitude via changes in belief content (supporting H8). However, salience emphasis frames do not influence the belief importance citizens attribute to the frame in interpreting the issue (rejecting H9).

5.2.2 Mediation of the effects of salience emphasis frames and issue-specific argument strength via belief content change, belief importance change, and belief evaluation change (RQ3)

The first mediation analysis, described in the previous **Subchapter 5.2.1**, revealed that the classic mediator of belief importance could not explain the effects on issue attitude, even though it often serves as an explanation for emphasis framing effects in the literature (e.g., Druckman & Nelson, 2003; Lecheler & de Vreese, 2012; Nelson, Oxley et al., 1997; Nelson & Oxley, 1999; Slothuus, 2008), as outlined in **Subchapter 2.3.3**. In contrast, the effects of the salience emphasis frame were significantly mediated via belief content. However, the indirect frame effects via this mediator were rather small and only partially explained the effects of salience emphasis frames on issue attitude. Thus, there is still room for other mediators that might explain the effects of salience emphasis frames, such as the mediator of belief evaluation change introduced in **Subchapter 2.8.4**.

Specifically, research question RQ3 asked whether salience emphasis frames directly affect the processing of presented thematic information by making the presented issue-specific arguments more compelling (i.e., belief evaluation change), not by changing the belief itself (i.e., the belief content about whether the therapy is expensive or not) and not by increasing the relevance of the salience emphasis frame as a valuation standard for the topic (i.e., belief importance). Thus, this subchapter reports a second mediation analysis integrating all three mediators simultaneously – belief content and belief importance derived from the literature and the newly proposed belief evaluation – to test whether the explanatory power of the mediation analysis is increased.

Statistical results

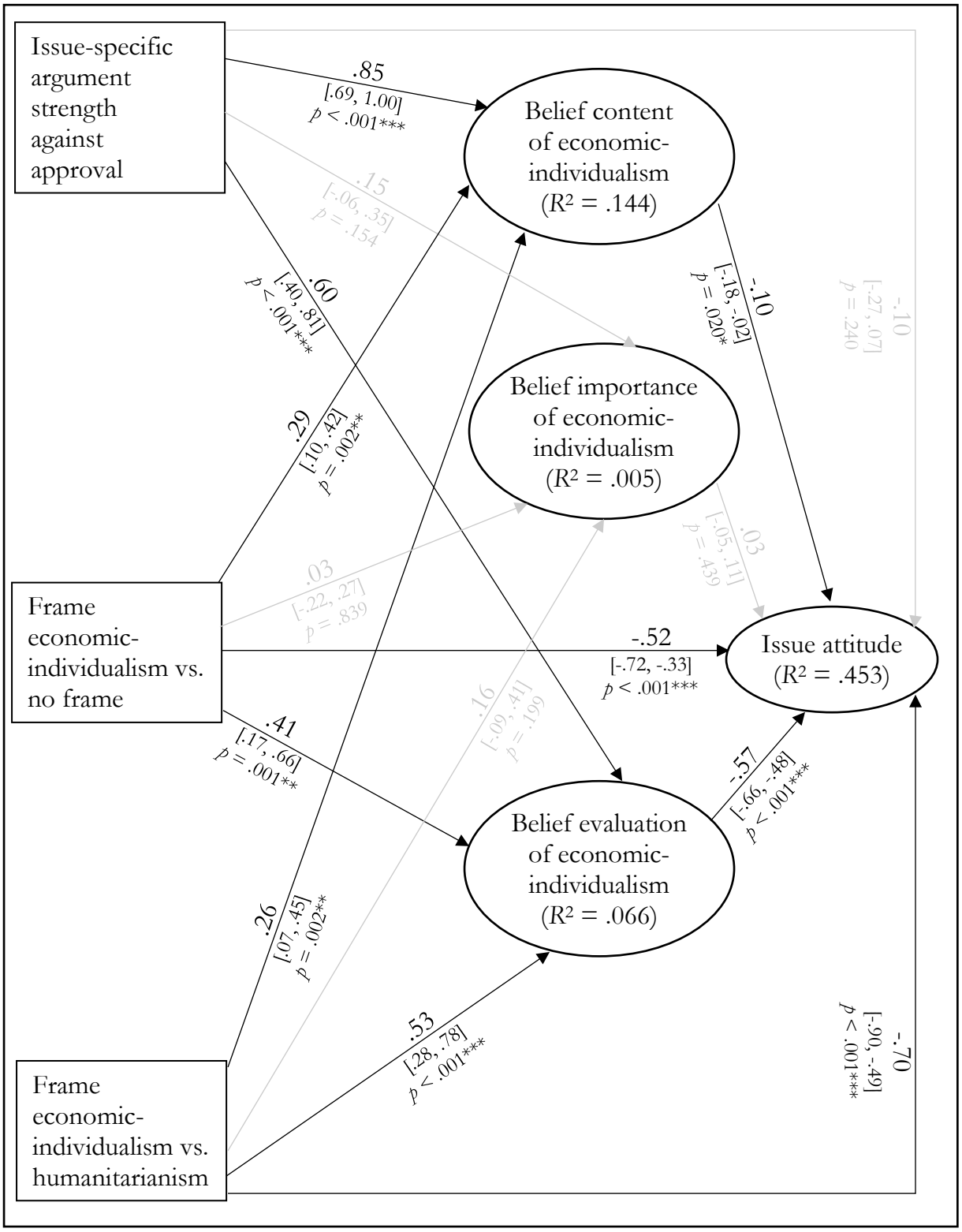
Even after integrating belief evaluation as a third mediator, the overall model fit of the structural equation mediation model was highly similar to that of the first model, showing again satisfactory values with CFI = .994, TLI = .991, RMSEA = .036, and SRMR = .020 (see **Figure 29**), enabling an interpretation of the mediation analysis. The indirect effects of the salience emphasis frames via belief importance remained insignificant ($b_{\text{compared to no frame}}$ = .00, $p_{\text{compared to no frame}}$ = .84, $b_{\text{compared to counter-frame}}$ = .01, $p_{\text{compared to counter-frame}}$ = .51, see **Table 55**), while the mediation of the frame effects via belief content were only marginally significant ($b_{\text{compared to no frame}}$ = -.03, $p_{\text{compared to no frame}}$ = .063, $b_{\text{compared to counter-frame}}$ = -.03, $p_{\text{compared to counter-frame}}$ = .076).

In contrast, the indirect effect via belief evaluation was significant for the economic-individualism frame compared to the no frame condition and compared to the condition with the counter-frame humanitarianism ($b_{\text{compared to no frame}}$ = -.24, $p_{\text{compared to no frame}}$ = .002, $b_{\text{compared to counter-frame}}$ = -.30, $p_{\text{compared to counter-frame}}$ < .001). Participants exposed to this frame perceived the issue-specific cost argument as more compelling ($b_{\text{compared to no frame}}$ = .41, $p_{\text{compared to no frame}}$ = .001, $b_{\text{compared to counter-frame}}$ = .53, $p_{\text{compared to counter-frame}}$ < .001), which then significantly reduced support for approval (b = -.57, p < .001).

According to a contrast test (see **Table 56**), the indirect effect of the salience emphasis frames via belief evaluation was significantly stronger than via belief content ($b_{\text{compared to no frame}}$ = .21, $p_{\text{compared to no frame}}$ = .005, $b_{\text{compared to counter-frame}}$ = .28, $p_{\text{compared to counter-frame}}$ < .001) and via belief importance ($b_{\text{compared to no frame}}$ = .24, $p_{\text{compared to no frame}}$ = .002, $b_{\text{compared to counter-frame}}$ = .31, $p_{\text{compared to counter-frame}}$ < .001). However, the direct effect of the economic-individualism frame remained significant ($b_{\text{compared to no frame}}$ = -.52, $p_{\text{compared to no frame}}$ < .001, $b_{\text{compared to counter-frame}}$ = -.70, $p_{\text{compared to counter-frame}}$ < .001). This indicates that the significant mediation via belief evaluation only partially explained the effects of salience emphasis frames. Nevertheless, the formal answer to research question RQ3 is that salience emphasis frames (partially) influence citizens' issue attitude via changes in the evaluation of beliefs.

However, not only the effects of the salience emphasis frames were mediated via belief evaluation change. The issue-specific argument effect was also significantly mediated via the newly introduced mediator of belief evaluation (indirect effect: b = -.34, p < .001). Higher issue-specific argument strength led to the evaluation that this thematic argument is more compelling (b = .60, p < .001), which subsequently decreased support for approval (b = -.57, p < .001). According to the contrast test, the indirect effect of issue-specific argument strength via belief evaluation change was also significantly stronger than the one via belief content (b = .35, p < .001), while the indirect effect via belief content remained significant (b = -.08, p = .022), as it did in the first mediation analysis reported in the previous **Subchapter 5.2.1**. Compared to the first mediation model, issue-specific argument strength no longer directly affected issue attitude in the second mediation model (b = -.10, p = .24). This suggests that the issue-specific argument effect was fully explained by the mediation after integrating the significant mediator of belief evaluation. That is, the newly introduced mediator of belief evaluation change did not only explain the effects of the salience emphasis frames but also the effect of issue-specific argument strength.

Figure 29. Mediation of issue-specific argument strength and salience emphasis frames on citizens' issue attitude via belief content change, belief importance change, and belief evaluation change of economic-individualism



Note. Results are based on SEM using MLR estimator with n = 833, $\chi^2(df = 72)$ = 137.42, CFI = .994, TLI = .991, RMSEA = .036, SRMR = .020, measurement model included but not shown for reasons of clarity, displayed are unstandardized coefficients with 95% confidence intervals in brackets, significant paths ($p < .05$) in black, insignificant paths ($p > .05$) in grey, * $p < .05$, ** $p < .01$, *** $p < .001$

Table 55. Effects of issue-specific argument strength and salience emphasis frames on citizens' issue attitude via belief content change, belief importance change, and belief evaluation change of economic-individualism

Effect	Unstandardized coefficient	*SE*	95% CI	*p*
Total effect of issue-specific argument strength on issue attitude	-.52	.10	[-.71, -.33]	< .001***
Direct effect	-.10	.09	[-.27, .07]	.240
Indirect via belief content	-.08	.04	[-.16, -.01]	.022*
Indirect via belief importance	.01	.01	[-.01, .02]	.501
Indirect via belief evaluation	-.34	.07	[-.48, -.21]	< .001***
Total effect of frame economic-individualism vs. no frame	-.79	.12	[-1.03, -.55]	< .001***
Direct effect	-.52	.10	[-.72, -.33]	< .001***
Indirect via belief content	-.03	.02	[-.06, .00]	.063†
Indirect via belief importance	.00	.00	[-.01, .0]	.844
Indirect via belief evaluation	-.24	.07	[-.38, -.09]	.002**
Total effect of frame economic-individualism vs. humanitarianism	-1.02	.12	[-1.26, -.77]	< .001***
Direct effect	-.70	.10	[-.90, -.49]	< .001***
Indirect via belief content	-.03	.01	[-.05, .00]	.076†
Indirect via belief importance	.01	.01	[-.01, .02]	.506
Indirect via belief evaluation	-.30	.08	[-.45, -.15]	< .001***

Note. CI = 95% confidence interval for unstandardized coefficient, *SE* = standard error, † $p < .1$, * $p < .05$, ** $p < .01$, *** $p < .001$, $n = 833$

Table 56. Contrasts for effects of issue-specific argument strength and salience emphasis frames on citizens' issue attitude via belief content change, belief importance change, and belief evaluation change of economic-individualism

Effect	Unstandardized coefficient	*SE*	95% CI	*p*
Mediation of issue-specific argument strength				
Contrast belief content vs. belief importance	-.09	.04	[-0.16, -0.02]	.018*
Contrast belief content vs. belief evaluation	.26	.08	[.10, .42]	.001**
Contrast belief importance vs. belief evaluation	.35	.07	[.21, .49]	< .001***
Mediation of frame economic-individualism vs. no frame				
Contrast belief content vs. belief importance	-.03	.02	[-.06, .00]	.077†
Contrast belief content vs. belief evaluation	.21	.07	[.06, .35]	.005**
Contrast belief importance vs. belief evaluation	.24	.08	[.09, .39]	.002**
Mediation of frame economic-individualism vs. humanitarianism				
Contrast belief content vs. belief importance	-.03	.02	[-.06, .00]	.072†
Contrast belief content vs. belief evaluation	.28	.08	[.12, .43]	< .001***
Contrast belief importance vs. belief evaluation	.31	.08	[.14, .47]	< .001***

Note. CI = 95% confidence interval for unstandardized coefficient, *SE* = standard error, † $p < .1$, * $p < .05$, ** $p < .01$, *** $p < .001$, $n = 833$

Interpretation of statistical results for RQ3

Before delving into the mediation of the effects of salience emphasis frames, some interpretative words are necessary for the mediation of the effect of issue-specific argument strength, even though this mediation is not a formal aspect of research question RQ3. Unsurprisingly, the argument strength of thematic information influenced citizens' knowledge about the issue (i.e., belief content change, also see the initial mediation in **Subchapter 5.2.1**) and how compelling citizens evaluated this information to oppose the approval of the new therapy (i.e., belief evaluation change). Both these aspects then influenced their issue attitude. **Subchapter 2.8.3** and **Subchapter 2.8.4** noted that thematic information often contains specific persuasiveness for a specific issue position. Therefore, the experiment intentionally manipulated issue-specific argument strength to vary how compelling the thematic information was considered in opposing the approval (see **Subchapter 4.2.4**). As such, citizens exposed to the strong issue-specific argument of high additional expenditures not only rated the new therapy as more expensive (i.e., belief content) but also evaluated this higher cost as a more compelling issue-specific argument to oppose the approval of the therapy (i.e., belief evaluation), as intended by the manipulation.

This result again highlights that issue-specific information can be persuasive, which is an important reason political communication research should separate this factor from salience emphasis frames (see **Subchapter 2.8.1** and **Subchapter 2.8.2**). The result also implies a certain degree of rationality in citizens' attitude formation, showing that citizens can recognize the issue-specific facts (i.e., belief content) and can (accurately) evaluate the persuasive quality thereof (i.e., belief evaluation) to adopt an attitude based on the persuasive quality of thematic information.

However, this rationality is simultaneously questioned when considering the mediation of the effects of salience emphasis frames on issue attitude via belief evaluation change (RQ3). In fact, the economic-individualism frame biased citizens' evaluation of how compelling the issue-specific argument strength was for opposing the approval. This means they did not exclusively rely on the thematic facts itself to evaluate how compelling these facts are, but the salience emphasis frames directly changed their processing and evaluation of the persuasiveness of thematic information. Salience emphasis frames reduce citizens' ability to judge issue-specific information in an unbiased way. Rather, the frames seem to foster motivated reasoning about the argument strength of this information. The frames provide a standard of reference to evaluate the information, which here led to the directional goal of evaluating this information in a way consistent with the frame (see **Subchapter 2.8.4**).

As in the initial mediation that did not consider belief evaluation (see **Subchapter 5.2.1**), the salience emphasis frames did not alter the general importance of the political value suggested by the frame. Thus, the frames did not change belief importance, but they changed more directly the processing and evaluation of the thematic information itself. Therefore, even if salience emphasis frames did not change the importance citizens

attributed to the political value employed by the frame, the influence of this reference to a political value existed by serving as an anchor from which to evaluate the thematic information in accordance with the frame. In other words, citizens do not need to accept the salience emphasis frame as a more important valuation standard, but the frame still changes how citizens perceive the persuasiveness of issue-specific information.

Nevertheless, this frame effect, which according to the data does not work via belief importance, should not be understood as a simple heuristic influence of salience emphasis frames on issue attitude. This is because its influence on the evaluation of beliefs implies a certain degree of systematic processing of issue-specific argument strength. However, this systematic evaluation is biased by exposure to salience emphasis frames. Specifically, compared to the no frame condition and compared to the counter-frame humanitarianism, the economic-individualism frame changed the perceived persuasiveness of issue-specific information about the additional costs due to an approval of the new therapy, and citizens evaluated the same cost amount as a more compelling reason to oppose the approval.

Furthermore, the mediation of the framing effects via changes in belief evaluation, but not via changes in belief importance, may explain the results for research question RQ2 (see **Subchapter 5.1.3**). These results indicated that frames not only influenced citizens adhering to the political value employed by the salience emphasis frame but also affected citizens with a low preference for this value. Likely, effects of non-resonant frames occur because salience emphasis frames do not must necessarily change the importance of a political value citizens do not hold, which can be rather complicated given the high stability of value preferences even though a frame only tries to change the importance of the value for the specific issue at hand. Salience emphasis frames seem to alter the evaluation of issue-specific argument strength more directly and thus, there is no need to change the importance of valuation standards.

This explanation and the mediation of frame effects via belief evaluation but not via belief importance has consequences in terms of assessing citizens' rationality in attitude formation. In fact, citizens change their attitude arbitrarily depending on different salience emphasis frames even without accepting the importance of the standard of reference that actually guides their evaluation of issue-specific information and thus, their attitude formation. That is, the change in belief evaluation is not substantiated by identifiable reasons such as learning that a specific political value is more important in understanding an issue. If this was the case, changes in attitudes could be interpreted as at least a somewhat rational adoption of different salience emphasis frames. However, as frames did not affect belief importance, but directly affected the evaluation of issue-specific argument strength, this mediation analysis provides additional evidence for irrationality in citizens' attitude formation under framing conditions.

Another important aspect of the results reported here is that the mediation of salience emphasis framing effects still worked partially via changes in belief content, although this indirect effect was small and the mediation via belief evaluation change was significantly stronger (see the contrast tests in **Table 56**). As noted in **Subchapter 5.2.1**,

the mediation of the frame effects via changes in belief content were unexpected and imply that salience emphasis frames already bias the information intake of thematic facts about an issue. Specifically, the economic-individualism frame led citizens to more likely store in their memory that the therapy is more expensive and leads to additional costs than when this frame was not present.

Interestingly, the result that salience emphasis frames bias information intake and the storing of basic facts about the issue in the memory already emerged in one of the treatment checks. **Table 36** in **Subchapter 4.4.2** clarified that the vast majority of participants correctly recognized the amount of additional costs an approval of the new therapy would bring about, with one exception. When the low cost was contextualized by the economic-individualism frame, respondents recognized the cost significantly less correctly, and more often incorrectly thought that the additional expenditures were high. This suggests that salience emphasis frames alter the content of citizens' beliefs about an issue, even if these salience emphasis frames do not provide any further thematic information. Nevertheless, the significantly stronger mediator for framing effects was still belief evaluation change, implying that salience emphasis frames more strongly bias the processing and evaluation of thematic information than does information intake.

However, even though the newly introduced mediator belief evaluation change could significantly explain the effects of salience emphasis frames on citizens' issue attitude, the direct effects of the frames on issue attitude persisted (see **Figure 29** and **Table 55**). This indicates that belief evaluation change only partially explains the framing effects. While introducing the new mediator helped better understanding the psychological processes behind salience emphasis framing effects, further explanations of these effects are needed. Previous studies on the mediation of framing effects also found a remaining direct effect, meaning that thus far, there is no "exhaustive model of the psychological mechanisms of framing effects" (Lecheler & de Vreese, 2012, p. 196). In this study, it may have been beneficial to also include emotions as a further mediator to explain in more depth the mechanisms behind framing. Emotions can (partly) explain emphasis framing effects (e.g., Kühne & Schemer, 2015; Lecheler, Bos, & Vliegenthart, 2015), and especially when working with identity-relevant value frames, emotions may be influential, as political values are often emotionally charged (cf. B. T. Scheufele & Gasteiger, 2007). However, limited space in the questionnaire meant that the focus of this study was on introducing belief evaluation change as a further cognitive mediator to better understand the multidimensional mediation process of framing effects.

In sum, the results presented in this subchapter addressed research question RQ3. It was clarified that the effects of salience emphasis frames also work via changes in the evaluation of beliefs about an issue without changing the importance of the political value suggested by the frame. Before summarizing all results concerning the mediation of salience emphasis framing effects (see **Subchapter 5.2.4**), the next **Subchapter 5.2.3** describes several robustness checks of these findings to ensure the statistical validity of the results.

5.2.3 Robustness checks

To secure the findings of the mediation model containing all three mediators explained in **Subchapter 5.2.2**, two further robustness checks were performed. The first robustness check extended the mediation model by including participants' value preference for economic-individualism as a two-level quasi-factor together with all possible interactions between issue-specific argument strength, salience emphasis frames, and citizens' political value preference to ensure that the indirect effects found were invariant to respondents' value preference.

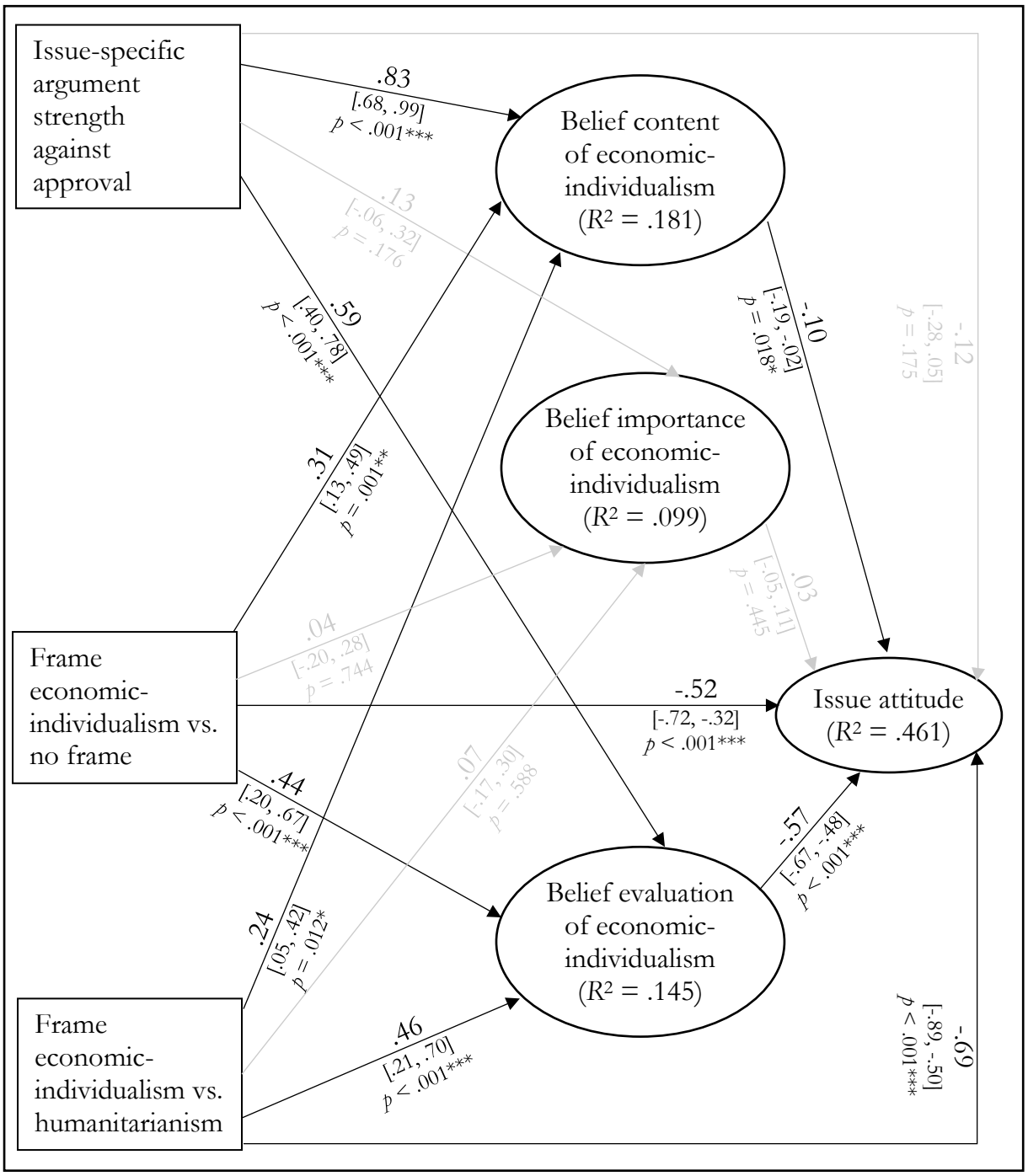
The overall fit of this model was satisfactory with CFI = .994, TLI = .991, RMSEA = .026, SRMR = .014 (see **Figure 30**). Furthermore, the indirect effects of the economic-individualism frame via belief evaluation on issue attitude remained significant (see **Table 57**) compared to the no frame condition (b = -.25, p < .001) and compared to the counter-frame humanitarianism (b = -.26, p < .001). Again, no significant mediation of the frame effect via belief importance was found ($b_{\text{compared to no frame}}$ = .00, $p_{\text{compared to no frame}}$ = .77, $b_{\text{compared to counter-frame}}$ = .00, $p_{\text{compared to counter-frame}}$ = .66), and only a marginally significant indirect effect via belief content occurred ($b_{\text{compared to no frame}}$ = -.03, $p_{\text{compared to no frame}}$ = .055, $b_{\text{compared to counter-frame}}$ = -.02, $p_{\text{compared to counter-frame}}$ = .087).

A contrast test (see **Table 58**) further validated that the indirect effects of the salience emphasis frames via belief evaluation were significantly stronger than via belief content ($b_{\text{compared to no frame}}$ = .22, $p_{\text{compared to no frame}}$ = .002, $b_{\text{compared to counter-frame}}$ = .24, $p_{\text{compared to counter-frame}}$ = .002) and via belief importance ($b_{\text{compared to no frame}}$ = .25, $p_{\text{compared to no frame}}$ = .001, $b_{\text{compared to counter-frame}}$ = .26, $p_{\text{compared to counter-frame}}$ = .001). However, the direct effect of the economic-individualism frame on issue attitude again remained significant ($b_{\text{compared to no frame}}$ = -.52, $p_{\text{compared to no frame}}$ < .001, $b_{\text{compared to counter-frame}}$ = -.69, $p_{\text{compared to counter-frame}}$ < .001). This indicates that the effects of the salience emphasis frames was still only partially mediated by the indirect effect via belief evaluation.

For the effects of issue-specific argument strength, the results were the same as when citizens' political value preference and the interactions were not considered. No direct effect of issue-specific argument strength on issue attitude was found (b = -.12, p = .18), but a significant indirect effect via belief evaluation (b = -.34, p < .001) and also via belief content emerged (b = -.08, p = .021). A contrast analysis again revealed that the indirect effect via belief evaluation was significantly stronger than via belief content (b = .34, p < .001). This demonstrates that the effect of issue-specific argument strength was mainly mediated via a change in belief evaluation.

As such, the first robustness check supports the findings of the earlier mediation analysis, confirming the solidity of the results. Moreover, **Table 57** shows that the respective total effect of the three-way interaction for the suppression of the issue-specific argument effect through value-resonant framing compared to the counter-frame (H6) remained significant (b = .99, p = .039), as in the ANOVA model (see **Subchapter 5.1.1**). Thus, this suppression effect is also robust when tested through a structural equation approach.

Figure 30. Mediation of issue-specific argument strength and salience emphasis frames on citizens' issue attitude via belief content change, belief importance change, and belief evaluation change of economic-individualism controlled for citizens' political value preference (dichotomized) and all possible interactions between argument strength, frames, and value preference



Note. Results are based on SEM using MLR estimator with n = 833, $\chi^2(df = 136) = 204.34$, CFI = .994, TLI = .991, RMSEA = .026, SRMR = .014, value preference for economic-individualism, all interactions, and measurement model included but not shown for reasons of clarity, displayed are unstandardized coefficients with 95% confidence intervals in brackets, significant paths ($p < .05$) in black, insignificant paths ($p > .05$) in grey, * $p < .05$, ** $p < .01$, *** $p < .001$

Table 57. Effects of issue-specific argument strength and salience emphasis frames on citizens' issue attitude via belief content change, belief importance change, and belief evaluation change of economic-individualism controlled for citizens' political value preference (dichotomized) and all possible interactions between argument strength, frames, and value preference

Effect	Unstandardized coefficient	*SE*	95% CI	*p*
Total effect of issue-specific argument strength on issue attitude	-.53	.10	[-.72, -.35]	< .001***
Direct effect	-.12	.09	[-.28, .05]	.175
Indirect via belief content	-.08	.04	[-.16, -.01]	.021*
Indirect via belief importance	.00	.01	[-.01, .02]	.514
Indirect via belief evaluation	-.34	.07	[-.47, -.21]	< .001***
Total effect of frame economic-individualism vs. no frame	-.80	.12	[-1.04, -57]	< .001***
Direct effect	-.52	.10	[-.72. -.32]	< .001***
Indirect via belief content	-.03	.02	[-.06, .00]	.055†
Indirect via belief importance	.00	.00	[-.01, .01]	.766
Indirect via belief evaluation	-.25	.07	[-.39, -.11]	< .001***
Total effect of frame economic-individualism vs. humanitarianism	-.98	.12	[-1.21, -.74]	< .001***
Direct effect	-.69	.10	[-.89, -.50]	< .001***
Indirect via belief content	-.02	.01	[-.05, .00]	.087†
Indirect via belief importance	.00	.01	[-.01, .01]	.660
Indirect via belief evaluation	-.26	.08	[-.41, -.11]	.001**
Total effect of value preference for economic individualism (as quasi-factor)	-.42	.10	[-.61, -.23]	< .001***
Total effect of argument strength X frame economic-individualism vs. no frame X value preference for economic individualism	.56	.48	[-.39, 1.51]	.245
Total effect of argument strength X frame economic-individualism vs. frame humanitarianism X value preference for economic individualism	.99	.48	[.05, 1.94]	.039*

Note. CI = 95% confidence interval for unstandardized coefficient, *SE* = standard error, † $p < .1$, * $p < .05$, ** $p < .01$, *** $p < .001$, $n = 833$

Table 58. Contrasts for effects of issue-specific argument strength and salience emphasis frames on citizens' issue attitude via belief content change, belief importance change, and belief evaluation change of economic-individualism controlled for citizens' political value preference (dichotomized) and all possible interactions between argument strength, frames, and value preference

Effect	Unstandardized coefficient	*SE*	95% CI	*p*
Mediation of issue-specific argument strength				
Contrast belief content vs. belief importance	-.09	.04	[-.16, -.02]	.017*
Contrast belief content vs. belief evaluation	.25	.08	[.10, -41]	.002**
Contrast belief importance vs. belief evaluation	.34	.07	[.21, .48]	< .001***
Mediation of frame economic-individualism vs. no frame				
Contrast belief content vs. belief importance	-.03	.02	[-.07, .00]	.061†
Contrast belief content vs. belief evaluation	.22	.07	[.08, .36]	.002**
Contrast belief importance vs. belief evaluation	.25	.07	[.11, .40]	.001**
Mediation of frame economic-individualism vs. humanitarianism				
Contrast belief content vs. belief importance	-.03	.02	[-.06, .00]	.093†
Contrast belief content vs. belief evaluation	.24	.08	[.09, .38]	.002**
Contrast belief importance vs. belief evaluation	.26	.08	[.11, .42]	.001**

Note. CI = 95% confidence interval for unstandardized coefficient, *SE* = standard error, † $p < .1$, * $p < .05$, ** $p < .01$, *** $p < .001$, $n = 833$

In addition to the first robustness check, a second robustness check was performed by expanding the model in two ways: the metric latent variable for respondents' value preference for economic-individualism was used as a quasi-factor instead of the dichotomized variable and all 16 control variables were integrated in the model.

This final structural equation model also demonstrated a satisfactory model fit with CFI = .974, TLI = .965, RMSEA = .033, and SRMR = .042 (see **Figure 31**), enabling interpretation of the mediation model. Again, a significant indirect effect of the economic-

individualism frame via belief evaluation was evident (see **Table 59**) compared to the no frame condition (b = -.19, p = .008) and compared to the counter-frame humanitarianism (b = -.19, p = .012). Furthermore, the mediation of the effects of the salience emphasis frames via belief importance remained insignificant ($b_{\text{compared to no frame}}$ = .00, $p_{\text{compared to no frame}}$ = .94, $b_{\text{compared to counter-frame}}$ = .00, $p_{\text{compared to counter-frame}}$ = .73).

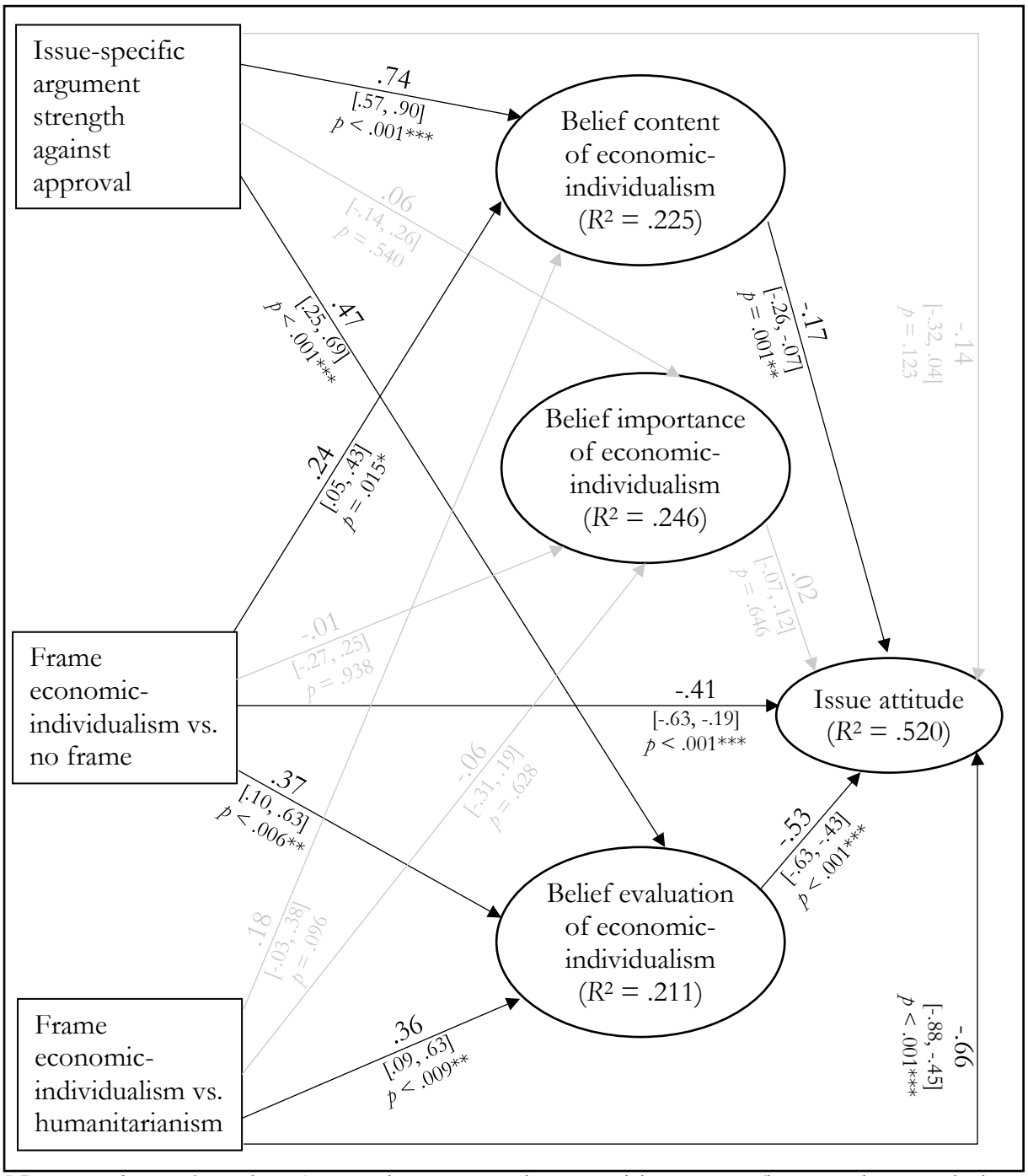
In addition, the previously marginally significant indirect effect of the economic-individualism frame via belief content was significant in this robustness check when compared to the no frame condition (b = -.04, p = .045), but it was insignificant compared to the counter-frame humanitarianism (b = -.03, p = .135). However, the contrast test of the two significant indirect effects still revealed that the mediation of the effects of the salience emphasis frames via belief evaluation was stronger than via belief content ($b_{\text{compared to no frame}}$ = .16, $p_{\text{compared to no frame}}$ = .031, $b_{\text{compared to counter-frame}}$ = .16, $p_{\text{compared to counter-frame}}$ = .027, see **Table 60**). Nevertheless, the direct effect of the economic-individualism frame compared to the no frame condition (b = -.41, p < .001) and compared to the counter-frame humanitarianism (b = -.66, p < .001) remained significant, again indicating that the analyzed mediators only partially explain the frame effects on citizens' issue attitude.

Regarding the effect of issue-specific argument strength, the coefficients in the mediation model remained stable. Again, the direct effect of thematic argument strength on issue attitude was insignificant (b = -.14, p = .123), whereas the indirect effect via belief content (b = -.12, p = .002) and via belief evaluation (b = -.25, p < .001) were still significant. However, a contrast test revealed that compared to previous models, the indirect path via belief evaluation was no longer significantly stronger than via belief content (b = .13 p = .102). In addition to the mediated main effects of issue-specific argument strength and salience emphasis frames, this last robustness check also revealed that the total effect for the three-way interaction that tested the suppression effect hypothesized in H6 was still significant (see **Table 59**). This again confirms the stability of this effect noted earlier when directly examining issue attitude by the means of ANOVAs and ANCOVAs (see **Subchapter 5.1.1** and **Subchapter 5.1.6**).

Based on the robustness checks of the tests of the mediation hypotheses, it can be concluded that even after controlling for the influence of 16 control variables and after employing the metric measure for the quasi-factor value preference, the mediation models always suggested the same interpretation: belief importance did not mediate the attitudinal effects of salience emphasis frames, but belief evaluation did and to a lesser extent, also belief content. That is, the robustness checks confirmed the aforementioned interpretation (see **Subchapter 5.2.2**) that framing influences issue attitudes less via strengthening the general applicability of specific assessment criteria such as a political value in interpreting an issue (i.e., belief importance). Rather, it directly affects the evaluation of the thematic information itself (i.e., belief evaluation).

The next **Subchapter 5.2.4** briefly summarizes the main results for the mediating mechanisms of salience emphasis frames and the main implications of these results.

Figure 31. Mediation of issue-specific argument strength and salience emphasis frames on citizens' issue attitude via belief content change, belief importance change, and belief evaluation change of economic-individualism controlled for all 16 control variables, citizens' political value preference (metric), and all possible interactions between argument strength, frames, and value preference



Note. Results are based on SEM using MLR estimator with n = 680 (lower n due to missing values for control variables), $\chi^2(df = 406) = 686.67$, CFI = .974, TLI = .965, RMSEA = .033, SRMR = .042, value preference for economic-individualism (metric), all interactions, and measurement model included (except for control variables) but not shown for reasons of clarity, displayed are unstandardized coefficients with 95% confidence intervals in brackets, significant paths ($p < .05$) in black, insignificant paths ($p > .05$) in grey, * $p < .05$, ** $p < .01$, *** $p < .001$

Table 59. Effects of issue-specific argument strength and salience emphasis frames on citizens' issue attitude via belief content change, belief importance change, and belief evaluation change of economic-individualism controlled for all 16 control variables, citizens' political value preference (metric), and all possible interactions between argument strength, frames, and value preference

Effect	Unstandardized coefficient	*SE*	95% CI	*p*
Total effect of issue-specific argument strength on issue attitude	-.51	.11	[-.72, -.30]	< .001***
Direct effect	-.14	.09	[-.32, .04]	.123
Indirect via belief content	-.12	.04	[-.20, .05]	.002**
Indirect via belief importance	.00	.00	[-.01, .01]	.721
Indirect via belief evaluation	-.25	.07	[-.38, -.12]	< .001***
Total effect of frame economic-individualism vs. no frame	-.65	.13	[-.91, -.38]	< .001***
Direct effect	-.41	.11	[-.63, -.19]	< .001***
Indirect via belief content	-.04	.02	[-.08, .00]	.045*
Indirect via belief importance	.00	.00	[-.01, .01]	.939
Indirect via belief evaluation	-.19	.07	[-.34, -.05]	.008**
Total effect of frame economic-individualism vs. humanitarianism	-.88	.13	[-1.14, -.62]	< .001***
Direct effect	-.66	.11	[-.88, -.45]	< .001***
Indirect via belief content	-.03	.02	[-.07, .01]	.135
Indirect via belief importance	.00	.00	[-.01, .01]	.734
Indirect via belief evaluation	-.19	.08	[-.34, -.04]	.012*
Total effect of value preference for economic individualism (metric)	-.30	.06	[-.41, -.19]	< .001***
Total effect of argument strength X frame economic-individualism vs. no frame X value preference for economic individualism	.07	.26	[-.44, .58]	.794
Total effect of argument strength X frame economic-individualism vs. frame humanitarianism X value preference for economic individualism	.51	.23	[.06, .97]	.027*

Note. CI = 95% confidence interval for unstandardized coefficient, *SE* = standard error, * $p < .05$, ** $p < .01$, *** $p < .001$, $n = 680$ (lower n due to missing values for control variables)

Table 60. Contrasts for effects of issue-specific argument strength and salience emphasis frames on citizens' issue attitude via belief content change, belief importance change, and belief evaluation change of economic-individualism controlled for all 16 control variables, citizens' political value preference (metric), and all possible interactions between argument strength, frames, and value preference

Effect	Unstandardized coefficient	*SE*	95% CI	*p*
Mediation of issue-specific argument strength				
Contrast belief content vs. belief importance	-.12	.04	[-.20, -.05]	.002**
Contrast belief content vs. belief evaluation	.13	.08	[-.03, .28]	.102
Contrast belief importance vs. belief evaluation	.25	.07	[.12, .38]	< .001***
Mediation of frame economic-individualism vs. no frame				
Contrast belief content vs. belief importance	-.04	.02	[-.08, .00]	.055†
Contrast belief content vs. belief evaluation	.16	.07	[.01, .30]	.031*
Contrast belief importance vs. belief evaluation	.19	.08	[.05, .34]	.010*
Mediation of frame economic-individualism vs. humanitarianism				
Contrast belief content vs. belief importance	-.03	.02	[-.07, .01]	.178
Contrast belief content vs. belief evaluation	.16	.07	[.02, .30]	.027*
Contrast belief importance vs. belief evaluation	.19	.08	[.04, .34]	.014*

Note. CI = 95% confidence interval for unstandardized coefficient, *SE* = standard error, † $p < .1$, * $p < .05$, ** $p < .01$, *** $p < .001$, $n = 833$

5.2.4 Summary

The results presented in the previous **Subchapter 5.2.1** and **Subchapter 5.2.2** explored the psychological mediation processes underlying the direct effects of salience emphasis frames on citizens' issue attitude described in **Chapter 5.1**. The findings showed a high degree of stability, even after a series of robustness checks (see **Subchapter 5.2.3**). This subchapter summarizes the main results of the mediation analyses. **Part VI** then discusses the broader societal implications of all individual findings provided in the entire result section (see **Part V**).

The basic rationale proposed in **Subchapter 2.8.4** was that the separation of salience emphasis frames and of new thematic information with varying issue-specific argument strength can explain why the studies reviewed in **Subchapter 2.3.3** found that (confounded) emphasis frames sometimes affect citizens' issue attitude via changing what people know about the issue (i.e., via belief content change), and sometimes work via changing the importance of the standard of reference emphasized by the frame in interpreting the issue (i.e., via belief importance change).

As hypothesis H8 proposed, when thematic information was separated from salience emphasis frames, the results of the mediation analyses revealed that different thematic information with varying issue-specific argument strength influenced citizens' issue attitude via changing their belief content about the issue (see **Subchapter 5.2.1**, also see **Table 61** for a summary of the results for all hypotheses and research concerned with the mediation of the effects of salience emphasis frames). However, contrary to hypothesis H9, salience emphasis frames also changed citizens' belief content about the issue, and the economic-individualism frame led citizens to believe that the costs for the new therapy were higher than when no frame was present or when the counter-frame humanitarianism contextualized the thematic information. This was despite that the salience emphasis frame added no further thematic information about the topic.

Moreover, salience emphasis frames did not affect the importance citizens attributed to the political value the frame emphasized as the important standard of reference by which to interpret the topic. Thus, the separation of salience emphasis frames and thematic information did not prove that salience emphasis frames work via changes in belief importance. This means that hypothesis H9 is rejected, even though previous studies revealed that even confounded frames also influence the importance of beliefs. Presumably, the political values employed by the salience emphasis frames in this study were too fundamental. Therefore, the importance of these values could not be easily changed even to interpret only the specific issue at hand (for a longer discussion, see **Subchapter 5.2.1**).

Table 61. Summary of hypotheses H8-H9 and research question RQ3 on the mediation processes behind the effects of thematic information with varying issue-specific argument strength and of salience emphasis frames on citizens' issue attitude

Hypothesis /research question	Statistical result	Answer to hypothesis / research question
H8: Effect of issue-specific argument strength mediated via belief content change	Effect of issue-specific argument strength on belief content significant + effect of belief content on issue attitude significant + indirect effect significant	Entirely supported
H9: Effect of salience emphasis frame mediated via belief importance change	No effect of salience emphasis frame on belief importance + indirect effect insignificant	Rejected
RQ3: Effect of salience emphasis frame mediated via belief evaluation change?	Effect of salience emphasis frame on belief evaluation significant + effect of belief evaluation on issue attitude significant + indirect effect significant	Effect of salience emphasis frame mediated via belief evaluation change

However, the mediation analysis in **Subchapter 5.2.2** revealed the newly introduced mechanism of belief evaluation change (see **Subchapter 2.8.4**) as the most influential mediator of salience emphasis framing effects (RQ3). Specifically, the economic-individualism frame altered how compelling citizens evaluated the amount of costs as thematic information to oppose the approval. As such, the frame worked by directly biasing the evaluation of the argument strength of issue-specific information. Most important, the salience emphasis frame influenced the evaluation of beliefs without affecting the importance citizens attributed to the frame of reference. This implies that citizens do not need to accept the frame as a more important valuation standard. Nevertheless, this frame effectively changes how citizens perceive the persuasiveness of issue-specific information. This raises further concerns about citizens' rationality in attitude formation, which was already questioned by the results on the direct effects of salience emphasis frames (see **Chapter 5.1**). The result of this mediation analysis highlights how arbitrarily citizens base their attitude on salience emphasis frames without substantiating these changes with identifiable reasons such as accepting the importance of a political value to interpret thematic information.

Now that the results for all proposed hypotheses and research questions have been presented and interpreted individually for each hypothesis and research question, the next and last part of this book (see **Part VI**) discusses the results more broadly. Moreover, potential societal implications are highlighted based on these results.

VI DISCUSSION

6.1 Implications of the results for assessing the strength of salience emphasis framing effects and citizens' rationality in attitude formation

The proposed theoretical and empirical separation of thematic information and the newly introduced concept of salience emphasis frames (see **Subchapter 2.8.1** and **Subchapter 2.8.2**) enabled an externally valid and precise test of the unique effects of emphasis frames on citizens' issue attitude. This was a test of unique frame effects that "most, if not all" former studies on framing effects could not perform, because they confounded emphasis frames through the provision of further thematic information, making it impossible to detect the isolated effects of frame emphases (Leeper & Slothuus, 2017, p. 3).

Furthermore, integrating varying issue-specific argument strength of new thematic information and citizens' political value preference as additional variables in the process of framing effects enabled a stepwise test of the effectiveness of frames when circumstances became increasingly more challenging for unique frame effects (see **Subchapter 2.8.3**). This allowed assessing more precisely than previous studies the superordinate research question of this book: How susceptible are citizens to framing effects and how rational is their attitude formation under framing conditions?

Part III delineated this superordinate question into testable hypotheses and subordinate research questions about the influence of salience emphasis frames on citizens' issue attitude. Clear effects of salience emphasis frames and detectable irrationality in citizens' attitude formation were expected. These effects were tested using a quantitative, experimental approach with a quasi-representative sample of German-speaking Swiss citizens (see **Part IV**).

Assessing the strength of salience emphasis framing effects

Given the robust empirical results discussed in **Part V**, the expectation that salience emphasis frames influence citizens' issue attitudes was not falsified. Although new thematic facts about a political issue were not ineffective and issue-specific argument strength significantly affected citizens' issue attitude on aggregate (H1), salience emphasis frames significantly altered issue attitudes without the provision of any new thematic information (H2 and H3).

Moreover, salience emphasis frames not only were effective when contextualizing thematic information with high issue-specific argument strength for the issue position of the frame, but also when issue-specific arguments were only weakly persuasive for this position (RQ1). That is, the results revealed the unique effects of salience emphasis frames that were persistent and independent of the factual content presented about the topic.

In addition, salience emphasis frames not only affected citizens for whom the frame was value-resonant and matched their political value preference, but the frames also influenced citizens for whom the frame was non-resonant (RQ2). However, citizens' political value preference for economic-individualism exerted an independent main effect on their issue attitude (H4).

Moreover, the effects of value-resonant salience emphasis frames were so strong they suppressed the effects of issue-specific argument strength (H5 and H6). In general, respondents were able to recognize the persuasive strength of thematic information about the issue and adopted an issue attitude according to the issue-specific argument strength when no frame or a counter-frame was present. However, when the frame was value-resonant, participants completely ignored the thematic facts about the issue containing only weak issue-specific argument strength for the issue position suggested by their frame and formed an attitude aligned with their frame in the same way as when the frame contextualized thematic information with high argument strength for its issue position.

In addition, when salience emphasis frames contextualized thematic information with low issue-specific argument strength for its issue position – i.e., when messages were incongruent – issue attitudes became increasingly polarized between citizens with different political value preferences. In contrast, frames suppressed the influence of value preferences on attitude formation when contextualizing compelling thematic information for its issue position (H7).

Based on these results, it can be concluded that citizens are rather susceptible to salience emphasis framing effects. These effects demonstrated a high degree of stability and were rather strong, despite that the circumstances became increasingly more challenging for the occurrence of unique framing effects such as reliance on weak issue-specific argument strength or non-resonance with citizens' political value preferences. That is, even when frames are not confounded with the supply of further thematic information, their effects are comparable to those revealed in previous confounded studies on simple emphasis framing effects in one-sided framing situations (see **Chapter 2.2**).

Thus, critics' concerns that the empirical paradigm regarding researching emphasis framing effects in political communication overrates the strength of framing effects (Leeper & Slothuus, 2017; D. A. Scheufele & Iyengar, 2017) seems somewhat exaggerated. The results here revealed that salience emphasis frames can actually be the powerful political tool with minimal costs but potentially strong effects, as proposed in the literature (Jacoby, 2000). This is because it can work as a subtle form of media influence (D. A. Scheufele, 2000) that exerts attitudinal effects without having to change existing beliefs via the supply of new and compelling issue-specific information, but by simply changing the frame of reference for the interpretation of thematic information (Chong, 2000). In other words, political actors do not necessarily need the power to control thematic information, as long as they can provide applicable salience emphasis frames to contextualize the given information about a political issue.

Furthermore, the results reported here imply that the concept of emphasis framing is not "dead." It has been confirmed as a unique form of political communication that can have persuasive effects independently from persuasion effects based on the supply of new thematic information. The more general implications of this result for future research on emphasis framing effects are highlighted in **Chapter 6.3**. Before then, it is important to elaborate the meaning of the strong influences of salience emphasis frames found for assessing citizens' rationality in attitude formation under framing conditions.

Assessing citizens' rationality in attitude formation under framing conditions

Tversky and Kahneman (1981) define rationality as the consistency and coherence of preferences (e.g., for specific decisions, attitudes, or behavior) when confronted with the same thematic information. That is, if citizens' attitude formation is to be judged as rational, they should not arbitrarily change their attitude but should consistently form the same attitude if no new thematic information is provided that alters the informational foundation of this attitude. As such, a rational attitude formation should be based on thematic information, but should not be affected by the additional presentation of salience emphasis frames that do not add any further information people do not already have in mind, because these frames do not alter the level of information relevant to the attitude.

Given this definition, former studies on emphasis framing effects, which confounded the presentation of frames through providing additional thematic information, could not fully assess citizens' rationality in attitude formation, despite contending that emphasis framing effects indicate citizens' incompetence in forming attitudes (cf. Druckman, 2001a). Chong and Druckman (2007b) legitimately argued that when emphasis frames provide new thematic information, a framing effect does not necessarily imply arbitrary shifts in citizens' attitudes, but can also result from learning from new information and point to the rational adoption of attitudes in accordance with changing substantive information. That is, former emphasis framing studies were not able to convincingly test irrationality in attitude formation because they provided varying information along with the varying emphasis frames (see **Subchapter 2.8.1**).

In contrast, the proposed conceptualization of salience emphasis frames can provide a formal test of rationality, because such frames do not change the informational basis of attitudes. This suggests that the effects of such frames are unjustified by changing thematic information. Rather, the attitudinal effects are arbitrary changes only because of the presentation of frames. That is, once supporting and once opposing exactly the same policy only because a salience emphasis frame emphasizes a certain aspect while the substantive thematic information remains constant does not reflect the consistent – i.e., rational – formation of attitudes based on the same fundamental facts about an issue.

While the results for hypothesis H1 showed that citizens to some extent formed their issue attitude based on the issue-specific argument strength of thematic information (see **Subchapter 5.1.2**), further results of this study demonstrated that the principle of rationality was violated multiple times. First, the additional presentation of salience

emphasis frames that contextualized the thematic information changed citizens' issue attitude, implying an arbitrary shift in attitudes based only on changes of the frame (H2 and H3, see **Subchapter 5.1.2**). Second, thematic information with a weak issue-specific argument strength for the issue position of the frame did not prevent arbitrary shifts in attitudes induced by additional salience emphasis frames (RQ1, see **Subchapter 5.1.3**). That is, these shifts occur even when there are good reasons to not arbitrary change one's attitude along the frame.

Third, sceptics might argue now that these changes in attitudes are actually not so arbitrary, but might only occur when the salience emphasis frame matches citizens' political value preference. In such a case, citizens would change their attitude when thematic information is constant, but this change would at least be limited to frames aligned with citizens' general political preferences. Thus, the effects could still be justified as at least somewhat rational. However, the results for research question RQ2 clearly indicate that non-resonant salience emphasis frames that do not match citizens' political value preference also exert attitudinal effects (see **Subchapter 5.1.3**). Essentially, attitudes not only arbitrarily oscillate on aggregate between the presentations of different salience emphasis frames, but also when these frames violate citizens' political value preferences.

Fourth, the results for hypotheses H5 and H6 indicate that when value-resonant salience emphasis frames can alter the influence of thematic information on citizens' issue attitude, even completely suppressing the effect of issue-specific argument strength (see **Subchapter 5.1.4**). This result is the strongest indicator for bounded rationality in citizens' attitude formation, highlighting the unimportance of substantive information when citizens form an attitude under certain framing conditions. In fact, citizens completely ignored issue-specific argument strength for the issue position of their value-resonant frame, following the frame at the same magnitude as when their frame contextualized strong issue-specific arguments for the issue position. Thus, the irrationality in citizens' attitude formation can be strong enough to render substantive thematic information meaningless under some framing conditions. In addition, the same citizens base their attitude on the issue-specific argument strength of thematic information under other framing conditions (i.e., when no frame or a non-resonant frame is present). This again emphasizes how arbitrary attitude formation takes place when different salience emphasis frames are present while the thematic information remains the same.

Nevertheless, sceptics might argue that the isolated result that citizens' simply follow their value preference while completely ignoring thematic facts about the issue indicates a form of rational attitude formation, as citizens successfully pursue the directional goal of attitude formation aligned with their political preferences rather than pursuing the goal of accurate attitude formation that follows issue-specific argument strength. However, there is a decisive reason for why the result implies bounded rationality. Specifically, this ignorance of issue-specific argument strength is not stable, but it varies in an arbitrary way for the same citizens depending on the framing condition. Issue-specific argument strength had an influence when no frame or the non-resonant frame was present, but not when a

value-resonant frame was used. This indicates that different framing conditions influenced citizens to employ different goals (either accuracy goals or directional goals) to interpret the same substantive thematic information, leading to different attitudes for the same thematic information.

That is, the suppression of the effect of issue-specific argument strength through value-resonant framing actually underlines how unstable – i.e., irrational – attitude formation takes place under framing conditions, even though one can find interpretations for why each single attitude might be the result of rationally following a specific information processing goal. Put differently, it can be inaccurate but rational to interpret thematic information with certain bias. However, it is irrational when this bias does not always emerge for the same thematic information and varies based on framing, because this instability violates the rationality principle of the coherence of decisions when the informational setting remains unchanged. A person may be biased, but not irrational when supporting a questionable president. However, when the same person opposes the president seconds later without having collected any new information about the president, this person is undoubtedly irrational because the attitudinal shift is unsubstantiated.

Furthermore, the results for hypothesis H7 revealed that when salience emphasis frames contextualized strong issue-specific arguments for its issue position, i.e., when the frame was congruent with the thematic information, these frames could at least depolarize attitudes of citizens with different political values (see **Subchapter 5.1.5**). From a normative perspective, this result may be desirable. However, again, citizens' attitudes were unstable and became increasingly polarized between citizens holding different political values when the same thematic information was contextualized by an incongruent frame suggesting the opposite issue attitude than the issue-specific argument strength of thematic information. That is, on one hand, the isolated result of a less biased assessment of issue-specific argument strength based on a congruent frame indicates that frames can foster citizens' rationality in the sense of more accurate attitude formation based on the substantive thematic information On the other, however, the fact that a different frame for the same thematic information polarized citizens' issue attitude implies again that salience emphasis frames inhibit consistent and rational attitude formation. Rather, they elicit very different results when citizens are confronted with the same thematic information.

The conclusion that salience emphasis frames can lead to bounded rationality in citizens' attitude formation is further corroborated by the results of the mediation analyses that tested the psychological mechanisms responsible for framing effects (see **Chapter 5.2**). The analyses revealed that issue-specific argument strength affected citizens' issue attitude via changes in people's knowledge about the issue (i.e., belief content change, H8). However, the decisive mediator of framing effects was the newly introduced mediator of belief evaluation change (RQ3), not belief importance change (not supporting H9), which is often expected to mediate emphasis framing effects (see **Subchapter 2.8.4**). Specifically, salience emphasis frames directly bias citizens' evaluation of the argument strength of thematic information (i.e., the persuasiveness of the facts about an issue) without

simultaneously strengthening the cognitive importance of the valuation standard suggested by the frame.

Thus, the shifts in citizens' issue attitudes evoked by salience emphasis frames were the result of biasing the systematic processing of the substantive content of the political topic, even though citizens did not agree more strongly with the importance of the frame that elicited this bias. Essentially, the change in belief evaluation and thereby in citizens' issue attitude is not substantiated by identifiable reasons such as learning that a specific value is more important in understanding an issue. This highlights again that salience emphasis framing effects are not the result of rational learning – not of new thematic information or of what is the important standard of valuation. Rather, the frames lead to unsubstantiated and arbitrary – i.e., irrational – changes in citizens' issue attitude.

However, the definition of rationality by Tversky and Kahneman (1981) is not the only way to define (ir-)rational attitude formation. Other definitions might lead to judging some isolated framing effects as rational, especially the effects of value-resonant frames, as these effects could be interpreted as rational in the sense of achieving the directional goal of being aligned with prior beliefs, i.e., with one's fundamental political value preferences. Many definitions of rationality in attitude formation take this functional, goal-oriented approach to rationality (for an overview, see Kruglanski & Boyatzi, 2012; Kruglanski & Orehek, 2009). This approach negates that only accurate attitude formation is rational, arguing that any formed attitude can be rational if it helps achieve a specific goal such as reinforcing existing attitudes or protecting one's identity a better than other attitudes. That is, the goal-oriented approach to rationality would interpret the attitudinal effects of value-resonance as rather rational.

In addition, further concepts of rationality are more concerned with the cognitive efficiency of decision-making and attitude formation (e.g., Gigerenzer & Goldstein, 1996). The basic premise of this approach is that full rationality in the classic economical sense of optimization (e.g., of decision, attitudes, and behavior) is difficult to achieve because people often do not have complete information (Downs, 1957). Moreover, even if they had all relevant information needed to form a rational judgment, they have only a limited cognitive capacity to consider all information when forming a judgment (Gigerenzer & Goldstein, 1996). Therefore, it can be rational to not extensively deliberate decisions but simply employ frugal, quick cognitive algorithms such as one-reason decision-making, which might not yield optimal – i.e., fully accurate – results, but sill satisfying results. Using this understanding to interpret the results, the effects of the salience emphasis frames employed in this study may not imply a fully rational attitude formation, but still an efficient and satisfying attitude formation. In fact, the economic-individualism and humanitarianism frames dealt with important and culturally shared political values that derive their strength from being applicable to many issues and from allowing a meaningful and still relatively accurate interpretation of political issues. Thus, it might be efficient to base one's attitude on such frames to form a meaningful issue attitude.

Certainly, these two further understandings of rationality have merits. However, the strength of the definition of rationality by Tversky and Kahneman (1981) is that it offers a clear reference for when to judge attitude formation as rational, namely consistently arriving at the same conclusion when substantive information remains unchanged. The problem with the other definitions of rationality, especially goal-oriented approaches, is their focus on isolated decisions (or formed attitudes) through which one will always find post hoc a reason to qualify any attitude as rational by assuming that the attitude resulted from pursuing a specific goal. In contrast, the point of reference in the definition of rationality via the postulate of consistency is not a single decision or attitude formation, but the reproducibility of the attitudinal outcome when there is no substantive reason to change one's attitude, i.e., when substantive information remains the same. That is, the point of reference for assessing rationality is clearly identifiable and additional (shaky) assumptions about what makes the formation of a single attitude rational or irrational are not needed.

In sum, the results of this study revealed clear violations of rational attitude formation when citizens form issue attitudes when salience emphasis frames are present. These violations refer to arbitrary attitudinal shifts not substantiated by changes in thematic information. In particular, salience emphasis frames can reduce the influence of substantive thematic facts about an issue on citizens' issue attitude, even though citizens are generally able to form their attitudes based on substantive thematic information when no explicit frames are present. However, the societal consequences of citizens' susceptibility to salience emphasis framing effects have not yet been discussed. Thus, the next **Chapter 6.2** elaborates potential implications of the usage of explicit frames in contemporary political communication processes.

6.2 Potential societal implications of the results

The existence of emphasis framing effects has often been considered an indicator for the potentially strong influence of political actors on public opinion (cf. Chong & Druckman, 2007b). The results presented in this book imply that such influences do not even require the provision of additional substantive thematic information, but can also work via salience emphasis frames, i.e., via highlighting the importance of interpreting the issue under the umbrella of a specific political value. Depending on which political value the frame emphasizes for the topic, citizens form significantly different issue attitudes even when thematic information does not change (see **Subchapter 5.1.2**). This means that political actors can influence public opinion without providing compelling new facts about an issue, which can be a cost-intensive task (e.g., producing credible evidence through scientific studies, finding experts that can provide compelling information about the issue).

In contrast, it can be sufficient to highlight a specific frame that suggests the intended issue attitude, a form of communication that does not require a complicated discussion about the credibility of each single issue-specific fact, but that affects citizens by

simply defining "what an issue is about" (Z. Pan & Kosicki, 1993, p. 55). Thus, it seems that framing is that assumed in the literature: a powerful tool to influence public opinion with minimal costs (Jacoby, 2000). This raises concerns about the validity of democratic decisions when citizens can be so easily manipulated (cf. Druckman, 2001a). Are the results of democratic elections nothing more than the result of an easily manipulated electorate? Do most of our attitudes stem from simple single exposure to a specific frame? Would referenda have completely different results, if they were repeated a few days later?

Of course not. Such interpretations of easily manipulated citizens neglect that while emphasis framing is a powerful tool, it does not belong to a single political force. It can be employed by all political actors because of its minimal costs. The fundamental result of this study is that single salience emphasis frames can lead to unsubstantiated, arbitrary shifts in citizens' issue attitudes. When exposed to one frame, citizens form an attitude aligned with this frame; when exposed to an opposite counter-frame, they form the opposite attitude even when the thematic information remains the same. That is, while salience emphasis frames have the potential to influence citizens' attitudes, other frames do so too.

Thus, the existence of salience framing effects does not necessarily lead to a strong influence of a specific political actor on public opinion and thereby to problematic democratic decisions. For instance, in sociological research, framing is often considered an important tool that gives communicative power to social movements with otherwise less privileged access to political resources (Benford & Snow, 2000). Employing salience emphasis frames can help these movements bring new perspectives into public discussion, name injustice and counter the frames of powerful elites. That is, whether framing effects do have problematic societal consequences such as a manipulated electorate with arbitrary issue attitudes, depends much more on whether citizens are only exposed to one salience emphasis frame for an issue or whether the media system (or the general structure of the public sphere) fosters citizens' exposure to different frames for the same topic.

Frame competition can limit problematic societal consequences of framing effects

The research discussed in **Subchapter 2.4.2** showed that when two competing emphasis frames are simultaneously presented for the same topic at the same time, the single framing effects cancel each other out (K. M. Hansen, 2007; Hartman & Weber, 2009; Sniderman & Theriault, 2004). Moreover, when both frames are equally applicable, citizens tend to take the middle position between the different frames (Chong & Druckman, 2007a). Thus, while single frames can lead to arbitrary shifts in citizens' issue attitudes, simultaneous frame competition can prevent such shifts, meaning that citizens are not simply swayed in one attitudinal direction. More important, when citizens are exposed to frames with different applicability at the same time, they rather follow the more applicable frame (Chong & Druckman, 2007a). This suggests a degree of accuracy when citizens weight the importance of different emphasis frames for an issue.

Unfortunately, we do not yet exactly know how the simultaneous frame competition of two equally applicable salience emphasis frames influences citizens' evaluation of

substantive thematic information because former studies did not separate emphasis frames and thematic information (see **Subchapter 2.8.1**). It would be highly interesting to know whether simultaneous frame competition not only helps in preventing the effects of single salience emphasis frames, but whether it also fosters a more accurate evaluation of issue-specific argument strength. Possibly, the effects of the two equally applicable salience emphasis frames cancel each other out, and then citizens use what remains as the third factor in the message to form their issue attitude: the issue-specific argument strength. However, it is also possible that citizens form biased attitudes along their political value preferences when competing salience emphasis frames are simultaneously present.

Nevertheless, **Subchapter 2.5.3** indicated that the effects of value-resonant frames seem weaker in situations of simultaneous frame competition than in single one-sided framing situations (Chong & Druckman, 2007a). Furthermore, multiple frames do not seem to further polarize citizens with different values because they also learn about other views on the topic (Beattie & Milojevich, 2017; for how media frame diversity enhances audience frame diversity, also see Huang, 2010). As such, while simultaneous frame competition might not prevent the biased evaluation of issue-specific argument strength, this bias could be substantially weaker than the strong biases found for single value-resonant salience emphasis frames that completely suppress the effect of issue-specific argument strength (see the results for H5 an H6 in **Subchapter 5.1.4**).

However, research on asynchronous frame competition has also revealed that competition between different frames does not always lead to weaker framing effects (see **Subchapter 2.6.3**). When emphasis frames are not immediately countered by another frame with the opposite valence but with some time delay, arbitrary attitudinal shifts still occur in the way that the frame at t_1 influences citizens' attitude in one direction and the counter-frame at t_2 reverses this attitude in the opposite direction. This is especially so when the initial framing effect leads to a memory-based attitude (Chong & Druckman, 2010, 2013), when the influenced attitude is held with weak attitude certainty (Matthes & Schemer, 2012), when citizens have less political knowledge (Lecheler & de Vreese, 2013), or when they have a lower need to evaluate (Chong & Druckman, 2010).

These results show that simultaneous competition between different frames, not the competition itself, seems to reduce citizens' susceptibility to emphasis framing effects. Therefore, one-sided emphasis frames, which are not immediately contested, can rather easily manipulate citizens, even when these frames are salience emphasis frames, as shown by the results reported in this book. Political actors might (ab-)use this tool to serve their particular interests. However, the best countermeasure for citizens' susceptibility to framing effects and their arbitrary shifts in issue attitudes seems to be the simultaneous presentation of competing frames.

When competing frames are simultaneously presented for an issue, framing can then even help citizens better understand political issues. Contemporary societies are characterized by a high degree of differentiation (Chernilo, 2002) and acceleration (Rosa, 2003), which increase the complexity of issues relevant to society that need public

discussion to organize democratic and collectively binding decisions related to these issues. Given the complexity of relevant issues in contemporary societies such as the functioning of financial markets, the structure of social security systems, or the emergence of new disruptive technologies, it can be challenging for citizens to understand the issues and to form clear preferences for how society should deal with the,.

Emphasis frames in political communication can help citizens solve this problem because frames make "sense of relevant issues" (Gamson & Modigliani, 1989, p. 3), "suggest how events should be understood" (Berinsky & Kinder, 2006, p. 641), and thus serve as an important mechanism to reduce the complexity of the social world. In particular, value emphasis frames can reduce the complexity of issues to a relatively small set of fundamental questions about which political values citizens prefer (see **Chapter 2.5**). The potential advantage of this reduction is that not only highly specialized experts are able to understand the issue, but it also enables ordinary citizens to form issue attitudes aligned with their value preferences. That is, employing simultaneous frame competition in political communication can help to integrate a relevant share of the population into the political discourse, not necessarily as participatory actors, but at least as empowered citizens that form attitudes toward complex issues relevant to society based on their political value preferences.

Problematic societal consequences of framing effects when simultaneous frame competition is missing

However, when this reduction of complexity via framing becomes too narrow and only one-sided salience emphasis frames are present, attitude formation aligned with political values is endangered, because citizens also follow one-sided salience emphasis frames that counter their value preferences when their preferred political value is not emphasized (see **Subchapter 5.1.3**). That is, when a single political camp has the power to dominate the public discourse, this camp can abuse salience emphasis framing, employing them to lead citizens to form issue attitudes that counter their own interests. The electorate's influenced attitudes might then also legitimize specific political decisions that are actually the preference of the frame sponsor, not of citizens. Thus, the potential danger of one-sided emphasis framing for democracies is on one hand, its power in divert citizens' attitudes from their values, which can distort democratic decisions.

On the other hand, when only their value-resonant salience emphasis frame is present, citizens form attitudes aligned with their political values, but these are overly biased, ignoring the substantive thematic content. Here, attitude formation is blind toward relevant issue-specific information (see **Subchapter 5.1.4**). Importantly, when explicit frames are missing, the same citizens demonstrate a less biased evaluation of thematic information and base their attitude on the substantive content of an issue. This confirms their general ability to accurately deliberate issue-specific information. As such, one-sided value-resonant salience emphasis frames can stop citizens from scrutinizing how well thematic information speaks for an attitude aligned with their political value preference.

These resonant salience emphasis frames simply reinforce citizens' existing worldview. Given that value-resonant one-sided frames can limit citizens' capacity to learn from new information, whether and how constructive deliberation about the substantive content of societal relevant issues is possible under this framing condition has to be questioned.

Through uncontested value-resonant framing, people tend to stick to their respective ideology when processing political information, making it difficult to find any consensus between different political camps regarding the interpretation of an issue. Thus, when each camp is exposed to only their respective value-resonant frame, which biases the evaluation of issue-specific argument strength, framing can transform the idealized concept of democratic deliberation about the most compelling facts of an issue (cf. Cooke, 2000) into a polarizing fight between camps with different deeply rooted, identity-relevant, and stable political values. A clash between different "value camps" makes it less likely that they will find any common ground regarding an issue, because it makes citizens less open to substantive thematic information that could serve as the common ground for pragmatic discussions about the pros and cons of a specific evaluation of an issue. This can paralyze the democratic decision-making process when different value camps are initially equally large and no side can convince (parts of) the other from its issue position in order to gain a democratic majority.

Of course, competing political value preferences are often not equally distributed in a specific society, but one value camp often has the majority by default. This prevents the immediate paralysis of democratic decision-making, because one camp can prevail with its majority. However, such a situation is still a value-loaded conflict in which value-identities are highly salient, which can reduce the perceived legitimacy of this decision for the defeated minority of citizens not adhering to the political value guiding the decision of the majority. Public discussion without explicit framing amplifies the relevance of political value preferences less strongly. Thus, ideally, the discussion is about the best issue-specific arguments, which subsequently elicit higher acceptance of the democratic decision taken, because everyone agrees with the better issue-specific arguments (cf. Cooke, 2000). However, it can be difficult for public discussion under conditions of explicit value emphasis framing and salient value identities, which inhibits citizens with different value preferences from judging the same thematic information equally, to generate agreement for a specific democratic decision among citizens with different value preferences.

From the viewpoint of citizens in the defeated value camp, substantive thematic information clearly indicates why the decision should differ from the one of the majority. Thus, they believe this decision is not legitimized by the issue-specific facts. In contrast, citizens holding the competing political value preference judge citizens that disagree with the democratic decision as irrational, because in their view, the same substantive thematic information justifies the decision. This perceived illegitimacy of the viewpoint of citizens with different political values may reinforce one's own political value preference as the right way to judge political issues in general, further polarizing the different value camps and rendering consensual democratic decisions less likely in the long term.

Toward a public sphere that limits citizens' irrationality induced by one-sided framing

To prevent the potential negative societal consequences of emphasis framing effects and to ensure the functioning of democratic societies, the structure of the public sphere should ensure simultaneous competition between different emphasis frames for an issue. This would prevent that a single political actor shapes the discourse, as one-sided salience emphasis frames can lead citizens to form attitudes that violate their political value preferences. It also seems necessary that this frame competition reaches citizens with different political value preferences, because when competition only occurs at the aggregate level of the public sphere, but individual citizens are only exposed to their value-resonant frame in a one-sided way, this can lead to very strong forms of motivated reasoning about issue-specific information, which could inhibit political decisions that span political camps.

Another option to avoid these potential negative societal consequences due to citizens' susceptibility to salience emphasis framing effects is, of course, that political actors forego the use of explicit value emphasis frames and limit their communication to providing issue-specific facts. This would bring the contest between the best issue-specific arguments to the fore and citizens' attitude formation could occur aligned with substantive thematic information, rather than aligned with salience emphasis frames and political value preferences.

However, it would be naive to expect political actors to limit their strategic communication to providing issue-specific facts or include their political competitors' frames into their own strategic communication. In Western liberal democracies, political actors ranging from parties to social movements compete for institutional and interpretative power. Likely, they do not voluntarily dispense with a powerful communicative tool like framing, which they expect will provide them with an advantage in political competition. Therefore, the public sphere needs intermediaries that aggregate the various emphasis frames and foster situations in which citizens are simultaneously exposed to multiple frames for an issue, not to the strategic communication of a single political actor.

This emphasizes the importance of unpartisan, professional journalism in a well-functioning democratic public sphere. Journalism that adheres to the news diversity standard (cf. Porto, 2007) and follows the professional norm of balanced reporting (cf. Hopmann, van Aelst, & Legnante, 2012) is likely the best way to ensure frame diversity, because this journalistic communication integrates various perspectives in the coverage of an issue or event (for a similar conclusion, see e.g., Beattie & Milojevich, 2017). In contrast, strategic communication by single political actors (e.g., via social media) often presents only their emphasis frames, omitting the frames of political competitors, thus threatening citizens' rational attitude formation.

Moreover, it seems insufficient that a balanced reporting exists only on the level of the media system (i.e., external pluralism) or on the level of single media outlets (i.e., internal pluralism, see Hallin & Mancini, 2004 for the differentiation between internal and external pluralism). To ensure citizens are simultaneously exposed to multiple frames for the same

issue and that no time delay is in play, balanced reporting should also be evident on the level of single media pieces (i.e., immediate pluralism).

Of course, professional journalism does not always report in a perfectly balanced way, and thus does not always meet the news diversity standard (for cross-country variation in the degree of partisan media in Western democracies, see e.g., Brüggemann, Engesser, Büchel, Humprecht, & Castro, 2014; Kaiser & Kleinen-von Königslöw, 2019). However, the prominent role of professional journalism as a constitutive element of the public sphere in Western democracies (see, e.g., Strömbäck, 2005), which at least attempts balanced reporting, seems to have prevented much of the irrationality that can result from one-sided framing effects. If not, more arbitrary political preferences in the electorate of Western societies or a much stronger polarization within these societies would have been evident in the past.

However, the structure of the public sphere is changing, which may render the societal influence of one-sided salience emphasis frames more problematic in the future. Professional journalism is under high economic pressure (Björkroth & Grönlund, 2018), and the emergence of new intermediaries such as social media platforms has introduced a powerful new competitor in journalism's role in structuring the public sphere (van Dijck & Poell, 2013). Of course, the rise of online platforms such as Google or Facebook does not necessarily mean citizens are exposed more often to one-sided emphasis frames. From a technical perspective, the potential for more frame diversity is even higher on these platforms, because the by far smaller distribution costs of communication enables political actors with less economic power to participate in the discourse and disseminate their frames. In addition, technically, these platforms can rather easily bundle different emphasis frames for an issue and present them simultaneously to citizen.

However, when these platforms and their algorithms foster citizens' general tendency of (partisan) selective exposure, i.e., the selection of attitude-consonant information and frames (Stroud, 2010), the potential for more frame diversity can easily transform into increased exposure to one-sided value-resonant emphasis frames. As mentioned, this exposure can render substantive thematic information irrelevant, meaning citizens will simply reinforce their existing worldviews, which can polarize societies in the long term. Therefore, societies should carefully monitor current developments regarding the restructuring of the public sphere and citizens' exposure to political information to prevent that citizens' general tendency to be susceptible to one-sided salience emphasis frames does not play a potentially more harmful role in democracies in the future.

6.3 General implications for the future of research on emphasis framing effects

In addition to the discussion of the results for citizens' rationality in attitude formation under framing conditions (see **Chapter 6.1**) and the potential societal consequences that

can result from the existence of salience emphasis framing effects (see **Chapter 6.2**), the future of research on emphasis framing and its effects in political communication must be elaborated.

The concept of emphasis framing has attracted much attention over the past decades (Borah, 2011a; D. A. Scheufele & Iyengar, 2017), which has much to do with the high integrative power of the framing approach (Matthes, 2007b, 2012). In the "multiparadigmatic research program" (D'Angelo, 2002, p. 879) of framing as a "bridging model" (Reese, 2007, p. 150), the entire process of public communication can be tracked analytically, from the construction of frames by political actors (e.g., Hänggli & Kriesi, 2012) via the handling of these frames by intermediaries such as news media (e.g., Brüggemann, 2014) to citizens' individual responses to these frames (e.g., Schemer et al., 2012) and the repercussions of their responses on political actors (e.g., Benford & Snow, 2000). Thus, the concept of emphasis framing potentially allows overcoming fractured analyses of single subordinate phenomena of political communication concerned with the public negotiation of the meaning of societal issues. Furthermore, it offers a holistic perspective that covers all relevant actors involved in and affected by emphasis framing (Entman, 1993; Entman et al., 2009).

However, the price of this integrative power is an increased theoretical vagueness about what emphasis framing is and is not. The concept has inspired so many studies in the past decades that the literature is filled with various definitions and empirical operationalizations of framing (Matthes, 2007b, 2009), and some scholars have begun criticizing the increasing theoretical and empirical vagueness of the concept (e.g., Cacciatore et al., 2016; Krippendorff, 2017; D. A. Scheufele & Iyengar, 2017). This culminated in an official discussion on whether political communication research should completely abandon the term framing – a discussion that was held during the business meeting of the division of Political Communication at the annual conference of the International Communication Association (ICA) in Fukuoka/Japan in 2016. Besides the general plethora of (emphasis) framing definitions and empirical operationalizations, critics' main argument for dropping the concept of framing is that it is increasingly indistinguishable from other types of communication and a "catch-all-phrase" (Cacciatore et al., 2016, p. 20) for actually very different phenomena.

This book seriously considered the more general critique of the concept of emphasis framing by clarifying the specific type of framing investigated, namely emphasis frames and their effects on citizens' issue attitudes (see **Chapter 2.1**), rather than thoughtlessly using the term "framing" as a superfluous label. Importantly, this study responded to a crucial criticism of the empirical paradigm of researching emphasis framing effects: that "most, if not all" (Leeper & Slothuus, 2017, p. 3) previous studies on emphasis framing effects confounded the presentation of frames with the provision of further issue-specific information (see **Chapter 2.8**). By carefully separating the effects of salience emphasis frames and of new issue-specific information, this study avoided using the term framing as a "catch-all-phrase," but enabled clearly testing the existence of unique emphasis framing

effects in competition with persuasion effects based on the provision of different thematic information.

The results presented in this book not only revealed that unique attitudinal effects of salience emphasis frames exist, but also that these frame effects can suppress the effects of issue-specific information (see **Chapter 5.1**). Given this clear empirical evidence that emphasis framing effects are an independently existing phenomenon of communicative effects that can be separated theoretically and empirically from other forms of persuasive influences, it would not be wise to completely abandon the term framing. Not pursuing the analysis of emphasis framing in future research only because the term is often used in misleading ways cannot be an answer to the framing phenomena revealed in this book. Rather, future research should continue to engage with the relevant concept of emphasis framing, but should be more careful in defining and operationalizing the frames under investigation.

The proposed conceptualization of salience emphasis frames (see **Subchapter 2.8.2**) can be a fruitful starting point for a better understanding of emphasis framing effects, because it does not mix the theory of framing with other types of persuasion. Instead, it draws on the idea of cross-thematic and well-known interpretative frames such as political core values. The same wine-red picture frame can surround different paintings ranging from a Kandinsky to a Picasso. Similarly, the same salience emphasis frame humanitarianism can encompass different issues ranging from social security systems to foreign policy. Understanding emphasis frames in this way prevents that any single thematic information (or to continue the metaphor, any single painting) is considered a frame, which increasingly fragments the concept of emphasis framing with each new study on issue-specific frames, threatening the survivability of the framing approach. That is, sticking to a rather small set of cross-thematic emphasis frames that are "socially shared and persistent over time" (Reese, 2001, p. 11) in society allows stopping the ongoing fragmentation of emphasis framing research and helps increase the comparability of various studies by investigating the same emphasis frame(s) in different situations, from frame building to framing effects. As such, the emphasis framing approach can be fruitful in extracting the substantive interpretative principles guiding political communication about issues and events and its subsequent (conditional) effects, instead of treating single facts and cross-thematic frames in the same way.

Some readers might still be concerned that the clear separation of salience emphasis frames and new thematic information narrows the framing concept too strongly. In reality, political actors do not limit their usage of frames to the presentation of cross-thematic emphasis frames, but they often also provide issue-specific information that supports the respective frame-setting. This is a valid point, and, of course, it can be relevant to analyze also selection emphasis frames, not only salience emphasis frames (see **Subchapter 2.8.2**). However, when analyzing selection emphasis frames, it is very important to restrict this to cross-thematic frames to avoid that the frames are indistinguishable from single issue positions. This would help avoid the further fragmentation of the concept of framing. In

addition, researchers should clearly indicate the type of cross-thematic frames they are analyzing (i.e., selection emphasis frames or salience emphasis frames). This is important because depending on whether thematic information co-varies with the presentation of frames or not, the implications of framing effects in terms of assessing citizens' rationality in attitude formation can strongly differ (see **Chapter 6.1**).

In sum, the results reported in this book revealed that the concept of emphasis framing effects is not "dead," because unique effects of salience emphasis frames exist. Thus, one cannot simply drop the concept of emphasis framing or mix it theoretically and empirically with other forms of persuasion such as the provision of new issue-specific information. Now that these more general implications for the future of the emphasis framing approach in political communication research have been highlighted, **Chapter 6.4** provides more specific suggestions on how to improve research on salience emphasis framing effects in future studies. This discussion is structured along the methodological limitations of this study.

6.4 Methodological and statistical limitations of this study and their implications for future research

General methodological limitations of experimental and survey research

From a methodological perspective, this study has limitations, as does any other social scientific work. Some limitations relate to problems of experiments and survey research in general, and others derive from the specific operationalization of concepts in this study. Beginning with the former aspect, one fundamental limitation of experiments is that they are part of a somewhat outdated paradigm of media effects that implicitly assumes a unidirectional cause and effect relationship from a media message on the audience (Bennett & Iyengar, 2008).

In the changing media landscape, which is developing into a high-choice media environment (Prior, 2007), the presented experimental approach ignores that citizens select the communicative content to which they expose themselves. Thus, it is unclear whether the causing variables manipulated in this experiment only exist in the experimental situation of forced exposure or an actual part of citizens' real information diet, which is the precondition that they can exert any effect in reality. Furthermore, even if citizens' expose themselves to political information containing the manipulated variables, there are good reasons to expect that not everyone does so equally. Rather, those who expose themselves to the causing variables are in reality a systematic group based on their selection decision (e.g., citizens with more interest in politics or in the issue under investigation).

The social media landscape may provide more opportunities for incidental exposure to political information that decreases selectivity (Valeriani & Vaccari, 2016) and increases the chance that everyone has the same probability of exposure to the manipulated causes. However, this potential is limited by the systematic selection biases citizens employ when

they decide to follow such news suggestions and expose themselves to it (Kaiser, Keller, & Kleinen-von Königslöw, 2018). That is, in reality, not everyone has the same probability of exposure to the causing variables, as is the case in a randomized experiment with forced exposure. This might have different effects due to (unknown) moderator variables that vary in reality, but not in the experiment.

Future experimental research on the attitudinal effects of media messages should not forego the crucial advantage of experiments using randomization. Rather, it should try to incorporate citizens' selectivity in the experimental setting and conceptualize persuasive effects as a cascade starting with randomly assigned arrays of messages over participants' selection of and exposure to one (or more) of these messages and moving to the attitudinal effects evoked by exposure to these selected messages.

This study could not solve the problem of analyzing unidirectional causality that ignores citizens' selection behavior. However, it did at least consider the potential bidirectionality between the causing variables and different characteristics of citizens by integrating their political value preference as a quasi-experimental factor in the design to analyze how different people react to the causing variables. Nevertheless, even if different groups of citizens were analyzed, exposure took place in an artificial setting for them all, which may led them to process the experimental stimuli differently than they would have in reality (e.g., with less awareness after a long workday).

In addition, experiments not only create a situation of forced exposure, but by explicitly asking participants for their opinion also of forced attitude formation. In reality, citizens may process political information without directly forming an attitude. Thus, the attitudes measured in experiments may only exist because the researcher pushed respondents to answer attitudinal questions. A further general problem of surveys and survey experiments is non-response error based on self-selection to participate in a study, which can generate systematic differences between the sampled respondents and the entire population (Krosnick, Lavrakas, & Kim, 2014) even when demographic variables are sampled correctly. This limitation also applies to this study and complicates the validity of statistical conclusions.

Specific methodological limitations of this study and possible improvements in future studies

Regarding the more specific limitations in terms of the operationalization in this research, the study tried to avoid sampling errors by employing a stratified randomized sampling strategy (Krosnick et al., 2014) based on predefined quotas representative of sex and the age of the German-speaking Swiss population aged between 18 and 69 years (see **Subchapter 4.3.1**). However, as participants were sampled from an online access panel, and people who sign up for such panels are a systematic group that differs from the population in terms of personality (Brüggen & Dholakia, 2010), the drawn sample has the problem of coverage error prior to sampling (Krosnick et al., 2014). This indicates that the study is not fully representative of Swiss citizens.

Furthermore, the data cleansing procedure employed increased the general problem of non-response error mentioned earlier. In fact, only around half the respondents who started the experiment finished it with appropriate participation quality and were subsequently included in data analysis (see **Subchapter 4.3.3**). While missing values were equally distributed in all experimental groups and thus, data cleansing did not threaten the experiment's internal validity (see **Subchapter 4.4.1**), those who did not finish the questionnaire may have been a systematic group, impeding generalization of the findings to all Swiss citizens. For example, the exclusion of participants who did not read the stimulus news article for at least 20 seconds and could not answer an easy question about the content of the article generated rather high means for process involvement in the sample. This indicated that the sample mainly consisted of people who read the article at least reasonably carefully. Thus, it cannot be ruled out that the results reported in this book only apply to people with medium or high process involvement and that no effects would have been found had the data not been cleansed and respondents with low process involvement included in the sample.

However, no data cleansing would have been similarly problematic, because it could have impeded finding an existing effect because of the statistical noise added by inattentive participants (Berinsky et al., 2014). Thus, this study decided to employ the data cleansing procedure, as mentioned, in favor of internal validity despite the disadvantages for generalization. In sum, the limitations regarding the sample suggest that respondents were not fully representative of Swiss citizens. Nevertheless, the sample was relatively diverse in terms of demographics and political variables (see **Subchapter 4.3.1** and **Subchapter 4.3.5**), which allows drawing – with some caution – conclusions beyond the sample and generalizing the findings to the population.

The study also has some limitations in terms of the design and manipulations. First, only the effects of situations with one-sided salience emphasis frames were investigated. As noted in **Subchapter 2.4.2**, previous research suggests that messages with one-sided frames exert generally stronger effects than messages with competing frames (Beattie & Milojevich, 2017; Chong & Druckman, 2007a). Therefore, it could be argued that it was comparatively easy to find salience emphasis frame effects in this study than it would have been in more realistic situations of simultaneous frame competition.

Nevertheless, the thematic information the frames contextualized was two-sided, implying that the employed salience emphasis frames had to compete with countering information and the messages themselves were not one-sided. Thus, the test for salience emphasis framing effects was more difficult than suggested by only examining one-sided framing conditions (for a more in-depth discussion, see **Subchapter 4.2.2**). Still, further studies should investigate the effects of salience emphasis frames in two-sided framing situations to analyze whether these situations foster more accurate attitude formation based on substantive thematic information or lead to weaker effects of value resonance than one-sided salience emphasis frames (see **Chapter 6.2**).

Another relevant limitation is that this study investigated short-term framing effects. However, it is unclear how durable such effects are, a limitation that often applies to experimental research (Gaines, Kuklinski, & Quirk, 2007). As **Chapter 2.6** revealed, emphasis framing effects based on single one-sided exposure can persist for up to two weeks (Lecheler & de Vreese, 2011), but when the same frame is not repeated over time, frame effects significantly decrease after two weeks and more so after six weeks (Lecheler, Keer et al., 2015). In addition, a counter-frame presented later in time can reverse initial framing effects (Chong & Druckman, 2010, 2013; Lecheler & de Vreese, 2013). Thus, the framing effects found in this study are probably susceptible to changes over time in a real life setting.

However, if the thematic information remains constant, further arbitrary changes in citizens' issue attitude based on the later presentation of a competing salience emphasis frame would rather strengthen the conclusion of bounded rationality in attitude formation. Thus, not having investigated the long-term effects of salience emphasis frames in this study should not compromise the conclusions drawn here. Nevertheless, it is worth further investigating the dynamics of salience emphasis framing effects to better understand the (non-)persistence of framing effects and its consequences on behavioral variables. To realistically capture the dynamic dimension of framing effects over time, future studies should also go beyond the experimental approach and use other research designs such as linkage analyses as a supplement, which bring together the content of real media messages, individual exposure to these messages, and the effects thereof on citizens' attitude and behavior (for further reading on linkage analysis, see e.g., Scharkow & Bachl, 2017).

Furthermore, the experimental design of this study only enabled investigating the suppression of the effect of issue-specific argument strength (H5 and H6) through one of two employed salience emphasis frames. This was because the constraints of an achievable sample size restricted the design to only being able to vary the issue-specific argument strength aligned with one frame (the economic-individualism frame, see **Subchapter 4.2.4**). Therefore, it is unclear whether the suppression effect found is a general phenomenon or only applies to the investigated salience emphasis frame. However, the described psychological mechanisms of motivated reasoning considered responsible for the effect should be invariant to specific emphasis frames or political value preferences (Slothuus & de Vreese, 2010; Taber & Lodge, 2006). Thus, one can assume that the same suppression would also take place for other value-resonant salience emphasis frames.

Nevertheless, future research should examine whether the results can be replicated with different salience emphasis frames employing different political values. Furthermore, the literature would benefit from more theoretical and empirical work on comparisons of the effectiveness of different value emphasis frames. Some studies have already introduced this aspect under the term "frame strength" (e.g., Aarøe, 2011; Chong & Druckman, 2007a; Druckman et al., 2013), but these studies only considered a small number of emphasis frames and confounded them by providing further thematic information. Here, it would be

worthwhile empirically investigating the set of common value emphasis frames in a specific culture and their relative influence on attitude formation for a wide range of political topics.

In addition, the experiment here only employed a single political issue, because this study did not have infinite resources. A relevant threat to the external validity of experiments using a single issue is the unknown interactions of the causal relationship over variations in topics and settings (Shadish et al., 2002, pp. 86–90). It cannot be ruled out that the effects found for the chosen political issue do not occur with a different political topic, because (unknown) variables might differ between the issues, such as the degree of partisan conflict (Slothuus & de Vreese, 2010) or issue salience (Bechtel et al., 2015). For more secure generalizations beyond the chosen topic, it would be more convincing to provide evidence for other political topics by running the same experiment again using a different issue (e.g., Chong & Druckman, 2007a, 2010; Druckman et al., 2013) or by employing a multi-stimulus design integrating varying political issues in a single experiment (e.g., Kaiser et al., 2018).

However, the problem of single issue experiments can be minimized by selecting a topic that is on average on the dimensions on which issues typically differ (i.e., not too polarized, not too specific, not too broad, no clear issue ownership etc.) and by discussing transparently the generalizability of the issue selected, as done in **Subchapter 4.2.3**. Nevertheless, replications of the results are needed in future research by employing other political issues in the stimuli. As long as the results are not replicated with other topics, the interpretation of the results provided here is, of course, allowed and necessary, although a high degree of uncertainty still remains in terms of generalization beyond the specific political issue at hand.

Furthermore, the external validity of the employed manipulations for issue-specific argument strength and salience emphasis frames and their relation in the experiment can be scrutinized. Specifically, the salience emphasis frames contextualized the thematic information rather explicitly by using clear and value-charged statements with an explicit stance on the issue. In reality, value emphasis frames are not always so explicitly constructed and might employ less persuasive appeals to motivate people to understand a topic under a specific political value. Nevertheless, participants perceived the stimulus news article containing these salience emphasis frames as realistic, credible, and professional (see **Subchapter 4.4.2**), indicating that the chosen construction of frames was not too far away from reality.

Regarding issue-specific argument strength, the manipulations were also rather specific, working with numerical values to vary thematic argument strength without changing the argument itself (the amount of additional expenses brought about by the new therapy). Of course, such numerical representations do not work for all kinds of issue-specific arguments. However, numbers and figures are an integral part of the political discourse; thus, they are a valid vehicle for the manipulation of issue-specific argument strength (Mérola & Hitt, 2016; Pedersen, 2016; Pedersen & Larsen, 2018). In addition, the manipulation checks revealed it was possible to manipulate argument strength by

employing numbers without having to change the issue-specific argument itself (see **Subchapter 4.4.3**).

Still, the perfect relation between issue-specific argument strength and salience emphasis frames that can be applied to these arguments without adding any new thematic information might not always be as unambiguous as for the manipulations employed in this study. An economic-individualism frame can rather easily contextualize the issue-specific argument of financial costs without adding any new information, as this argument is a subset of the superordinate political value. However, the same frame can may not as easily contextualize thematic information without adding any new information when it is not already implicitly connected to the frame (see **Subchapter 2.8.2**).

Nevertheless, there are many other areas for situations in which salience emphasis frames can be applied. Examples are the following: an environmental frame could contextualize the amount by which carbon dioxide is reduced through a new policy measure, an egalitarian frame could contextualize how educational measures improve the chance of graduation of children with less privileged backgrounds, or a law and order frame could contextualize how many crimes can be prevented by a new surveillance tool. That is, many policies or societal developments are connected to indications of quantity, and for such situations, value framing as simple salience emphasis framing could bias the perception of the issue-specific argument strength indicated through these quantities.

However, note that in this study, the specific argument strengths for opposing the approval (i.e., the amount of additional costs) were carefully selected to avoid floor and ceiling effects. This was achieved by creating the issue-specific cost arguments effective enough to exert differential effects on issue attitude, but not too effective to ensure that the additional economic-individualism frame could still have an influence. This had the disadvantage that the humanitarianism counter-frame could not exert effects on top of the already strong counter-argument of saving lives (see **Subchapter 5.1.2**). Furthermore, it elucidates the problem that salience emphasis frames will not always influence issue-specific argument strength. When thematic information has very high argument strength for a specific issue position, salience emphasis frames will most likely not have additional attitudinal effects.

Thus, the results should not be interpreted as indicating that salience emphasis frames always exert strong effects that suppress the effect of issue-specific argument strength when value-resonant. Instead, the results should be read as a proof of theory that frames can have such effects. Future research could investigate the point at which – i.e., at which effect size – issue-specific argument strength becomes too influential for the additional occurrence of salience emphasis framing effects to better understand in which informational settings such frames are (in-)effective.

In addition, while this study found statistically significant attitudinal effects, these effects were merely slightly different response patterns in a questionnaire depending on the experimental group. These differences were often not larger than a single scale point on a six-point scale (e.g., participants in one group checked number 4 on average and in another

group number 5). That is, there were no dramatic shifts in issue attitudes, and consequences of this different response patterns on other variables such as observable behavior were not investigated. On the other hand, exposure to emphasis frames likely occurs more frequently in reality, more than only once as in this study. However, the repetition of an emphasis frame over time can reinforce initial framing effects (Lecheler & de Vreese, 2013), as discussed in **Subchapter 2.6.2**. Thus, the differences in response patterns found in the questionnaire might translate into salience emphasis framing effects that are more substantial in reality.

Statistical limitations

In addition, some limitations derive from the statistical analyses. The Levene's tests prior to most of the ANOVAs and ANCOVAs showed a problem with heteroscedasticity, i.e., unequal variances between the experimental groups, which violates the assumption of homoscedasticity to allow for ANOVAs. However, while non-parametric tests exist for one-way ANOVAs to account for such violations, there are no suitable non-parametric tests available for factorial ANOVAs of more than a 2x2 design (Field, 2009, p. 454). Thus, classic parametric factorial AN(C)OVAs were conducted in this study to analyze the rather complex 2x3x2 design. In addition, several robustness checks, described in **Subchapter 5.1.6**, and persistent total effects in the mediation analyses (see **Subchapter 5.2.3**) indicate the stability of the results in all statistical analyses performed.

Furthermore, using sum-to-zero-contrasts to decompose the three-level factor salience emphasis frame for the factorial ANOVAs, ANCOVAs, and meditation models can be subject to criticism. Usually, such contrasts must be fully orthogonal – i.e., no contrast should contain the same group more than once – to not encounter a multiple comparison problem increasing the type I error rate (Field, 2009, pp. 360–364). The contrasts for the analyses in this study were not fully orthogonal, but the same economic-individualism frame was used in two comparisons in the full models: against the level without frames and against the level with the counter-frame humanitarianism. This coding of the contrasts was the only meaningful way to test the hypotheses in a theoretically appropriate way (for an extensive discussion, see **Subchapter 5.1.1**). Any orthogonal contrast coding would not have allowed a simultaneous test of all hypotheses in a single model, but would have added orthogonal, but unnecessary, comparisons not relevant to the specific hypotheses (e.g., Helmert contrasts, see Field, 2009, p. 371).

However, even if using a conservative adjustment of p-values for the non-orthogonal sum-to-zero contrast in the models and doubling the p-values, as recommended by the Bonferroni correction (Field, 2009, pp. 372–373), all main effects would remain significant at the level of $p < .001$. An exception is the significant three-way interaction for the suppression of the effect of issue-specific argument strength due to value-resonant framing compared to the counter-frame (H6). In some models, this suppression effect would be only marginally significant at the level of $p < .1$ after a conservative Bonferroni correction. However, as this three-way interaction was very stable in the robustness checks

with the ANCOVAs (see **Subchapter 5.1.6**) and in the total effects in the robustness checks for the mediation analyses (see **Subchapter 5.2.3**), the issue of non-orthogonality does not strongly affect the validity of the results. In addition, the simple effects analyses used to decompose the three-way interactions employed corrections for multiple comparisons in the factor salience emphasis frame (see **Subchapter 5.1.4**).

Regarding the robustness checks for the effects on issue attitude (see **Subchapter 5.1.6**), whether some of the integrated covariates are theoretically moderator variables that condition the found effects rather than pure covariates can be questioned. For example, a high need for cognition could lead to stronger effects for issue-specific argument strength than for salience emphasis frames; a high need for closure could strengthen frame effects that unambiguously address how to evaluate the topic; or a higher income could weaken the effects of the issue-specific argument dealing with additional costs, because these additional costs may affect people with more money less than they affect people with a lower income.

However, integrating only one of these variables as a further quasi-experimental factor in the design would mean testing four-way interactions through a four-factorial design when examining the suppression effect conditioned by a further moderator. Such an analysis is not only very complicated to interpret but it also requires much more statistical power than this study could provide. Nevertheless, some of these models were computed when exploring the data, but these analyses did not reveal robust evidence of the conditional influences of the control variables on the effects proposed in the hypotheses.

A further criticism of the results could pertain to how the suppression of the effect of issue-specific argument strength emerged through value-resonant framing. It could be argued that the suppression simply stemmed from a ground effect of the strong issue-specific argument against the approval for participants with a high preference for economic-individualism. In fact, the effect of the value-resonant frame economic-individualism for this group was only marginally significant (with $p = .06$, $d = .32$ compared to no frame and $p = .10$, $d = .30$ compared to the counter-frame, see **Figure 25** in **Subchapter 5.1.4**). This might suggest that the salience emphasis frame did not push participants to oppose the approval more strongly than did the strong issue-specific argument. Based on this result, this could be argued as the actual explanation for the found suppression effect, not that the value-resonant frame reinforced the issue-specific argument strength of the weak argument so strongly it was as effective as the strong argument.

However, two aspects refute this critique. First, the mean for the situation where the value-resonant frame contextualized the strong argument was $M = -0.87$ for the latent variable, equal to about $M = 3.40$ on the composite scale ranging from 1 to 6. That is, there was space on the scale to more strongly oppose the approval, countering the idea of a potential ground effect. Second, the effect of the value-resonant frame economic-individualism when contextualizing the weak issue-specific argument had the highest effect size of all simple effects reported in this book ($d = .97$ compared to the non-resonant counter-frame humanitarianism, again see **Figure 25**). This implies that the suppression

effect must have resulted from the strong influence of the value-resonant salience emphasis frame on the weak issue-specific argument, increasing its persuasiveness to that of the strong issue-specific argument.

A further limitation relates to the interpretation of the mediation analyses discussed in **Chapter 5.2**. Whereas the experimental design of this study ensured a test of causality for the effects of the independent variables on the mediator variables and the dependent variable of issue attitude, the design could not formally prove the causal relationship between the mediator(s) and the dependent variable. Even after finding a significant indirect effect of the independent variable via a mediator on the dependent variable in a mediation analysis, it remains unclear whether the independent variable affected first the mediator and in a second step, this mediator influenced the dependent variable, or whether the independent variable changed the dependent variable and this dependent variable subsequently affected the mediator (Hayes, 2018, pp. 15–19).

To be certain about the causal direction between the mediator(s) and dependent variable, a second experimental test would be needed that directly manipulated the mediator(s) and checked the causal effect on issue attitude. However, as in most single experiments, this formal test was not performed in this study, because it would require an additional experiment. Nevertheless, the mediation analyses provided first insights into the causal mechanisms behind salience emphasis framing effects, even though these insights were correlational. Important, the newly introduced mediator of belief evaluation change was an influential explanation of salience emphasis framing effects, and such frames seem to directly bias the processing and evaluation of issue-specific argument strength.

However, belief evaluation change only partially mediated the effects of salience emphasis frames on citizens' issue attitude, implying the (unmeasured) existence of additional mediators not incorporated into this study. Most important, the study would have benefited from examining emotions as a further mediator of emphasis framing effects, which was not possible because of limited space in the questionnaire. However, emotions have been shown to (partially) mediate the effects of emphasis frames (Clifford, 2019; Feinholdt et al., 2017; H. J. Kim & Cameron, 2011; Kühne, 2013, 2014; Kühne et al., 2015; Kühne & Schemer, 2015; Lecheler, Bos et al., 2015; Lecheler, Schuck, & de Vreese, 2013; Nabi, 2003; Schuck & Feinholdt, 2015). Moreover, emotions should be relevant when salience emphasis frames employ appeals to citizens' political values, as these values not only represent citizens' cognitive preferences, but also their emotionally charged identity-relevant preferences (cf. B. T. Scheufele & Gasteiger, 2007). Here, this study could not present the "exhaustive model of the psychological mechanisms of framing effects" lacking (Lecheler & de Vreese, 2012, p. 196) in the literature (see **Subchapter 5.2.2**). Future studies should try to integrate all mediators relevant for framing effects, such as belief content change, belief importance change, belief evaluation change, and emotions in a single theoretical model to better assess empirically the relative influence of these competing mediators.

Finally, this book did not cover the statistical results concerned with further dependent variables measured in the questionnaire (see **Subchapter 4.3.2**), but it focused only on the central dependent variable, namely citizens' issue attitude. Still, note that neither salience emphasis frames nor issue-specific argument strength affected citizens' attitude importance or their attitude certainty in a series of additionally computed statistical models (see https://doi.org/10.23662/FORS-DS-1013-1 for the entire R-script for the data analysis). That is, while salience emphasis frames affected citizens' issue attitude (see **Chapter 5.1**), these attitudes were not held with higher certainty or considered more important than when no frames were present. Previous studies found that attitude certainty and attitude importance increased the resistance to subsequent persuasive attempts (Tormala, Clarkson, & Petty, 2006; Tormala & Petty, 2002). **Subchapter 2.6.3** highlighted that this is also the case for delayed counter-framing. The fact that salience emphasis frames can change attitudes but not the resilience of these attitudes stresses again how arbitrarily citizens base their issue attitude on frames without forming strong and persistent attitudes, which are therefore susceptible to further arbitrary changes when counter-frames are presented later in time (cf. Chong & Druckman, 2010). That is, the results regarding these two additional dependent variables support the central conclusion of this book, namely that attitude formation under conditions of salience emphasis framing is characterized by bounded rationality.

In contrast to the null findings for attitude certainty and attitude importance, salience emphasis frames slightly influenced citizens' paying intention, i.e., the amount of additional costs they would be willing to pay for their insurance rates. However, this effect was not robust and the non-significant main models in which this significant effect occurred hinder a valid interpretation of this effect. Moreover, the measure of paying intention was itself biased, because asking for a specific amount of money while simultaneously presenting an obvious anchor in the stimuli (i.e., the amount of additional costs for the manipulation of issue-specific argument strength) can generate strong anchor effects (Wilson, Houston, Etling, & Brekke, 1996) that confound the measurement. Thus, the results for salience emphasis frame effects based on this measure can be misleading and are not interpretable in a reliable way.

Summary

In sum, the limitations of this study mainly concern external validity including not having a fully representative sample, relying on experimental survey data, examining the effects with only one political issue and two salience emphasis frames, and focusing on single exposure and short-term effects. Given that this study ensured high internal validity for the tests of the direct effects on issue attitude (see **Chapter 4.4**) by making some concessions to the degree of external validity, the results of this study should not be interpreted as meaning that salience emphasis frames always exert strong effects that can suppress the effects of issue-specific argument strength. Instead, the results should be understood as a proof of theory that frames can have such effects.

Moreover, salience emphasis framing effects found in a single survey experiment are far from durable attitudes in a real world setting, more far from actual individual behavior based on influenced attitudes, and even more far from finally influencing collective behavior of societies through framing effects in political communication. For each single step, there are hundreds – if not thousands – of competing variables that might prevent salience emphasis framing effects on citizens' issue attitudes from subsequently leading to irrational decisions in democracies. Thus, interpreting the results regarding societal consequences can only be highly speculative.

Nevertheless, ignoring the evidence that salience emphasis frames can suppress the effects of issue-specific argument strength, as demonstrated in this study, cannot reasonably address the fundamental generalization problem of social scientific research and should not prevent deliberating potential consequences for society. Such consequences are at the heart of social science and always worthy of discussion because of their potential relevance. Therefore, **Chapter 6.2** discussed the potential implications of the results for democracies, even though they are speculative and not corroborated by empirical data on the macro-level. The next and last chapter of this book (see **Chapter 6.5**) summarizes the main conclusions based on the existence of salience emphasis framing effects.

6.5 Concluding remarks

For dozens of years, research on communication and media effects has focused on the question of how susceptible citizens react to communicative attempts that try to change their attitudes (Neuman & Guggenheim, 2011). Many different types of communication have been analyzed to determine their effectiveness in changing political attitudes. However, less types have received more attention in political communication research than the examination of attitudinal effects elicited by emphasis frames (D. A. Scheufele & Iyengar, 2017). Numerous empirical studies (see **Chapter 2.2** to **Chapter 2.7**) suggested that simple changes in the emphasis on a specific aspect of an issue or event can produce "(sometimes large) changes of opinion" (Chong & Druckman, 2007b, p. 104). The often replicated result that citizens' attitudes can be manipulated by a rather easily applicable communicative tool such as making a specific aspect of a topic more salient has raised strong concerns regarding citizens' rationality in attitude formation under (one-sided) framing conditions (cf. Druckman, 2001a), which is an important prerequisite for the functioning of democracies.

However, recent critics on the emphasis framing approach in political communication (e.g., Cacciatore et al., 2016; Leeper & Slothuus, 2017; D. A. Scheufele & Iyengar, 2017) argue that former effect-oriented studies confounded the concept of different frame emphases through varying issue-specific information. Thus, the strength of (one-sided) framing effects on citizens' issue attitudes might be overstated in the literature, and may only be classic persuasion effects induced by providing new issue-specific

information (see **Subchapter 2.8.1**). In addition, this confounding makes it impossible to assess citizens' rationality in attitude formation, because attitudinal shifts based on frames could similarly result from rationally learning from new issue-specific information and thus, may not be arbitrary. As such, the potential negative societal consequences of emphasis framing effects may do not need to be so strongly feared.

Based on this criticism, this study introduced the concept of salience emphasis frames as a type of emphasis frame not confounded through the provision of further thematic information. Rather, it works by contextualizing the given thematic information with well-known and cross-thematic patterns of interpretation such as political values (see **Subchapter 2.8.2**). This conception of emphasis frames enables determining whether unique effects of frames exist independently from issue-specific information, which is important in the theoretical survivability of the emphasis framing approach as a unique concept of communicative influences. Moreover, this conception enables testing more precisely how rationally citizens' attitude formation takes place under framing conditions.

Furthermore, integrating the two additional variables of varying issue-specific argument strength as a property of thematic information and citizens' political value preference (see **Subchapter 2.8.3**) enabled testing for the effects of salience emphasis frames in differently challenging situations. For instance, when the salience emphasis frame (did not) match(ed) citizens' value preference or when the thematic information (only) contained a weak (strong) issue-specific argument strength for an issue attitude in accordance with the salience emphasis frame. This enables better assessing the conditions under which (one-sided) salience emphasis framing effects occur.

In addition, the separation of salience emphasis frames and new thematic information allowed a more fine-grained exploration of the different psychological mechanisms that mediate the attitudinal effects of these two variables. Besides this more differentiated perspective of the mediators that were previously proposed in the literature, **Subchapter 2.8.4** also introduced a new mediator for the effects of salience emphasis frames, namely belief evaluation change, which captures more directly how such frames bias the systematic processing of issue-specific argument strength.

Based on experimental data (see **Part IV**), the results of this study (see **Part V**) revealed that unique effects of (one-sided) salience emphasis frames exist, and that citizens formed significantly different issue attitudes depending on which salience emphasis frame contextualized the same thematic information. Several mediation analyses indicated that such frames exert their effects via changing how compelling citizens evaluate the issue-specific argument strength for an attitude in accordance with the frame to be, while not affecting the importance citizens attribute to the emphasized political value that biased their evaluation of thematic information. Moreover, salience emphasis frames not only influenced citizens' issue attitude on aggregate but also when contextualizing thematic information with a weak issue-specific argument strength for an issue attitude aligned with the frame and when the frame was non-resonant with citizens' political value preference. However, the strongest effects of salience emphasis frames occurred when the frame was

value-resonant, which fully suppressed the effects of issue-specific argument strength. When a value-resonant frame contextualized weak issue-specific argument strength for its issue position, citizens followed their frame at the same magnitude as they would when this frame contextualized thematic information with high issue-specific argument strength for this issue position.

As such, the results indicate that salience emphasis frames have unique effects independent of the provision of thematic information. Moreover, these effects occur under various conditions. Thus, it does not seem wise to abandon the idea of emphasis framing in future political communication research, because salience emphasis frames have been confirmed as an existing phenomenon of communicative influences that can be distinguished theoretically and empirically from persuasion based on the supply of new thematic information (see **Chapter 6.3**). However, future research should more carefully define and operationalize emphasis frames to prevent further fragmentation of the emphasis framing approach and to not further threaten the scientific survivability of this approach, which captures an empirically unique and influential form of media influence that can even suppress other forms of communicative effects such as the provision of substantive thematic information.

In addition, the results elucidate citizens' bounded rationality in attitude formation under (one-sided) framing conditions (see **Chapter 6.1**). Despite constant thematic information, citizens formed significantly different attitudes depending on the emphasis on a certain aspect of this issue-specific information. This implies arbitrary and thus irrational attitudinal shifts that are not substantiated by changing thematic information. Moreover, these changes cannot even be explained by learning that the emphasized political value is more important in interpreting the issue, because the mediation analyses revealed that the effects were not mediated via belief importance changes, but via belief evaluation changes. This indicates that salience emphasis frames lead to arbitrary shifts in citizens' evaluation of thematic information without agreeing (more) on the reason for this shift. Furthermore, changes in issue attitudes also occurred for citizens that did not hold the political value emphasized by the frame as more important in issue interpretation. This implies that salience emphasis framing effects violate rationality in the sense of inconsistent attitudes when thematic information remains unchanged and in the sense of also showing these inconsistencies in violation to one's general political value preference. However, most problematic for citizens' rationality in attitude formation is the result that while citizens can generally form their issue attitude based on substantive thematic information, they can completely ignore the issue-specific argument strength of thematic information when contextualized with a value-resonant frame.

This bounded rationality in citizens' attitude formation under one-sided framing conditions can have problematic societal consequences for democracies (see **Chapter 6.2**). On one hand, framing can lead citizens to form issue attitudes based on emphasized political values they do not prefer. This means that political actors with the power to set the frame for an issue can push citizens away from their values, which could distort

democratic decisions. On the other, when citizens only expose themselves to their value-resonant frame, making them unable to evaluate issue-specific facts accurately, consensual agreements about political issues become less likely between citizens with different political values. This is because they cannot agree on the evaluation of substantial thematic facts that could otherwise serve as a basis for the mutual deliberation of issues. Instead, the increased biased evaluation of issue-specific facts along competing political values triggered by value-resonant frames rather fosters the political polarization of societies.

Taken together, it was shown that one-sided salience emphasis frames exert unique effects on citizens' issue attitude, which can threaten rational attitude formation based on substantive thematic information, which can be dangerous for the democratic decision-making process. However, previous results on selection emphasis framing revealed that the best way to avoid problematic framing effects is simultaneously presenting competing frames for an issue, leading citizens to take the middle position between different emphasis frames. Thus, to prevent that the revealed tendency of citizens for irrational attitude formation based on one-sided salience emphasis frames translates into potentially harmful consequences for democracies, societies should ensure a balanced public connection that covers all relevant frames for political issues for all citizens.

VII REFERENCES

Aarøe, L. (2011). Investigating frame strength: The case of episodic and thematic frames. *Political Communication*, *28*(2), 207–226. https://doi.org/10.1080/10584609.2011.568041

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

Ajzen, I. (2001). Nature and operation of attitudes. *Annual Review of Psychology*, *52*, 27–58. https://doi.org/10.1146/annurev.psych.52.1.27

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice-Hall.

Allen, M. (1991). Meta-analysis comparing the persuasiveness of one-sided and two-sided messages. *Western Journal of Speech Communication*, *55*(4), 390–404. https://doi.org/10.1080/10570319109374395

Allern, S., & Blach-Ørsten, M. (2011). The news media as a political institution. *Journalism Studies*, *12*(1), 92–105. https://doi.org/10.1080/1461670X.2010.511958

Andrews, A. C., Clawson, R. A., Gramig, B. M., & Raymond, L. (2017). Finding the right value: Framing effects on domain experts. *Political Psychology*, *38*(2), 261–278. https://doi.org/10.1111/pops.12339

Andrews, J. C., Durvasula, S., & Akhter, S. H. (1990). A framework for conceptualizing and measuring the involvement construct in advertising research. *Journal of Advertising*, *19*(4), 27–40. https://doi.org/10.1080/00913367.1990.10673198

Andrews, J. C., & Shimp, T. A. (1990). Effects of involvement, argument strength, and source characteristics on central and peripheral processing of advertising. *Psychology and Marketing*, *7*(3), 195–214. https://doi.org/10.1002/mar.4220070305

Baden, C. (2010). *Communication, contextualization & cognition: Patterns & processes of frames' influence on people's interpretations of the EU constitution*. Delft: Eburon.

Baden, C., & Lecheler, S. K. (2012). Fleeting, fading, or far-reaching? A knowledge-based model of the persistence of framing effects. *Communication Theory*, *22*(4), 359–382. https://doi.org/10.1111/j.1468-2885.2012.01413.x

Ball-Rokeach, S. J., & Loges, W. E. (1994). Choosing equality: The correspondence between attitudes about race and the value of equality. *Journal of Social Issues*, *50*(4), 9–18. https://doi.org/10.1111/j.1540-4560.1994.tb01195.x

Ball-Rokeach, S. J., Power, G. J., Guthrie, K. K., & Waring, H. R. (1990). Value-framing abortion in the United States: An application of media system dependency theory. *International Journal of Public Opinion Research*, *2*(3), 249–273. https://doi.org/10.1093/ijpor/2.3.249

Barker, D. C. (2005). Values, frames, and persuasion in presidential nomination campaigns. *Political Behavior*, *27*(4), 375–394. https://doi.org/10.1007/s11109-005-8145-4

Barker, D. C., & Carman, C. J. (2000). The spirit of capitalism? Religious doctrine, values, and economic attitude constructs. *Political Behavior*, *22*(1), 1–27. https://doi.org/10.1023/A:1006614916714

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173–1182. https://doi.org/10.1037//0022-3514.51.6.1173

Baslevent, C., & Kirmanoglu, H. (2011). Discerning self-interested behaviour in attitudes towards welfare state responsibilities across Europe. *International Journal of Social Welfare*, *20*(4), 344–352. https://doi.org/10.1111/j.1468-2397.2010.00751.x

Beattie, P., & Milojevich, J. (2017). A test of the "news diversity" standard: Single frames, multiple frames, and values regarding the Ukraine conflict. *The International Journal of Press/Politics*, *22*(1), 3–22. https://doi.org/10.1177/1940161216673194

Bechtel, M. M., Hainmueller, J., Hangartner, D., & Helbling, M. (2015). Reality bites: The limits of framing effects for salient and contested policy issues. *Political Science Research and Methods*, *3*(3), 683–695. https://doi.org/10.1017/psrm.2014.39

Beißert, H., Köhler, M., Rempel, M., & Beierlein, C. (2014). *Eine deutschsprachige Kurzskala zur Messung des Konstrukts Need for Cognition [A German short scale to measure the construct need for cognition]*. Retrieved from GESIS - Leibniz Institute for the Social Sciences website: https://www.gesis.org/fileadmin/upload/forschung/publikationen/gesis_reihen/gesis_arbeitsberichte/WorkingPapers_2014-32.pdf

Benford, R. D., & Snow, D. A. (2000). Framing processes and social movements: An overview and assessment. *Annual Review of Sociology*, *26*, 611–639. https://doi.org/10.1146/annurev.soc.26.1.611

Bennett, W. L., & Iyengar, S. (2008). A new era of minimal effects? The changing foundations of political communication. *Journal of Communication*, *58*(4), 707–731. https://doi.org/10.1111/j.1460-2466.2008.00410.x

Berinsky, A. J., Huber, G. A., & Lenz, G. S. (2012). Evaluating online labor markets for experimental research: Amazon.com's Mechanical Turk. *Political Analysis*, *20*(3), 351–368. https://doi.org/10.1093/pan/mpr057

Berinsky, A. J., & Kinder, D. R. (2006). Making sense of issues through media frames: Understanding the Kosovo crisis. *The Journal of Politics*, *68*(3), 640–656. https://doi.org/10.1111/j.1468-2508.2006.00451.x

Berinsky, A. J., Margolis, M. F., & Sances, M. W. (2014). Separating the shirkers from the workers? Making sure respondents pay attention on self-administered surveys. *American Journal of Political Science*, *58*(3), 739–753. https://doi.org/10.1111/ajps.12081

Bizer, G. Y., Krosnick, J. A., Holbrook, A. L., Wheeler, S. C., Rucker, D. D., & Petty, R. E. (2004). The impact of personality on cognitive, behavioral, and affective political processes: The effects of need to evaluate. *Journal of Personality*, *72*(5), 995–1027. https://doi.org/10.1111/j.0022-3506.2004.00288.x

Bizer, G. Y., Tormala, Z. L., Rucker, D. D., & Petty, R. E. (2006). Memory-based versus on-line processing: Implications for attitude strength. *Journal of Experimental Social Psychology*, *42*(5), 646–653. https://doi.org/10.1016/j.jesp.2005.09.002

Björkroth, T., & Grönlund, M. (2018). Competitive pressure and profitability of newspaper publishing in 12 European countries. *Journal of Media Business Studies*, *15*(4), 254–277. https://doi.org/10.1080/16522354.2018.1527623

Blankenship, K. L., & Wegener, D. T. (2011). Value activation and processing of persuasive messages. *Social Psychological and Personality Science*, *3*(4), 391–397. https://doi.org/10.1177/1948550611424084

Böcken, J., & Altenhöner, T. (2011). Solidarität in der Krankenversicherung: Was unterscheidet freiwillig GKV-Versicherte von anderen Gruppen der gesetzlichen und privaten Krankenversicherung? [Solidarity in health insurance: How differ voluntary GKV-insured from other groups in public and private health insurance?]. *Sozialer Fortschritt*, *60*(4/5), 87–91. https://doi.org/10.3790/sfo.60.4-5.87

Bollen, K. A. (2002). Latent variables in psychology and the social sciences. *Annual Review of Psychology*, *53*, 605–634. https://doi.org/10.1146/annurev.psych.53.100901.135239

Bollen, K. A., & Lennox, R. (1991). Conventional wisdom on measurement: A structural equation perspective. *Psychological Bulletin*, *110*(2), 305–314. https://doi.org/10.1037/0033-2909.110.2.305

Bolsen, T., Druckman, J. N., & Cook, F. L. (2014). The influence of partisan motivated reasoning on public opinion. *Political Behavior*, *36*(2), 235–262. https://doi.org/10.1007/s11109-013-9238-0

Borah, P. (2011a). Conceptual issues in framing theory: A systematic examination of a decade's literature. *Journal of Communication*, *61*(2), 246–263. https://doi.org/10.1111/j.1460-2466.2011.01539.x

Borah, P. (2011b). Seeking more information and conversations: Influence of competitive frames and motivated processing. *Communication Research*, *38*(3), 303–325. https://doi.org/10.1177/0093650210376190

Borah, P. (2018). Competitive frames and accuracy motivations: Testing the role of ambivalence in value framing effects. *Journal of Media Psychology*, 1–18. https://doi.org/10.1027/1864-1105/a000237

Bornschier, S. (2010). The new cultural divide and the two-dimensional political space in Western Europe. *West European Politics*, *33*(3), 419–444. https://doi.org/10.1080/01402381003654387

Bornstein, R. F., Kale, A. R., & Cornell, K. R. (1990). Boredom as a limiting condition on the mere exposure effect. *Journal of Personality and Social Psychology*, *58*(5), 791–800. https://doi.org/10.1037/0022-3514.58.5.791

Brewer, P. R. (2001). Value words and lizard brains: Do citizens deliberate about appeals to their core values? *Political Psychology*, *22*(1), 45–64. https://doi.org/10.1111/0162-895X.00225

Brewer, P. R. (2002). Framing, value words, and citizens' explanations of their issue opinions. *Political Communication*, *19*(3), 303–316. https://doi.org/10.1080/01957470290055510

Brewer, P. R. (2003). Values, political knowledge, and public opinion about gay rights: A framing-based account. *Public Opinion Quarterly*, *67*, 173–201. https://doi.org/10.1086/374397

Brewer, P. R., Graf, J., & Willnat, L. (2003). Priming or framing: Media influence on attitudes toward foreign countries. *International Communication Gazette*, *65*(6), 493–508. https://doi.org/10.1177/0016549203065006005

Brewer, P. R., & Gross, K. (2005). Values, framing, and citizens' thoughts about policy issues: Effects on content and quantity. *Political Psychology*, *26*(6), 929–948. https://doi.org/10.1111/j.1467-9221.2005.00451.x

Brown, T. A. (2015). *Confirmatory factor analysis for applied research* (2nd ed.). New York, London: Guilford Press.

Brüggemann, M. (2014). Between frame setting and frame sending: How journalists contribute to news frames. *Communication Theory*, *24*(1), 61–82. https://doi.org/10.1111/comt.12027

Brüggemann, M., Engesser, S., Büchel, F., Humprecht, E., & Castro, L. (2014). Hallin and Mancini revisited: Four empirical types of Western media systems. *Journal of Communication*, *64*(6), 1037–1065. https://doi.org/10.1111/jcom.12127

Brüggen, E., & Dholakia, U. M. (2010). Determinants of participation and response effort in web panel surveys. *Journal of Interactive Marketing*, *24*(3), 239–250. https://doi.org/10.1016/j.intmar.2010.04.004

Busby, E., Flynn, D. J., & Druckman, J. N. (2018). Studying framing effects on political preferences: Existing research and lingering questions. In P. D'Angelo (Ed.), *Doing news framing analysis II*. New York: Routledge.

Cacciatore, M. A., Scheufele, D. A., & Iyengar, S. (2016). The end of framing as we know it … and the future of media effects. *Mass Communication and Society*, *19*(1), 7–23. https://doi.org/10.1080/15205436.2015.1068811

Cacioppo, J. T., & Petty, R. E. (1979). Effects of message repetition and position on cognitive response, recall, and persuasion. *Journal of Personality and Social Psychology*, *37*(1), 97–109. https://doi.org/10.1037/0022-3514.37.1.97

Cacioppo, J. T., & Petty, R. E. (1982). The need for cognition. *Journal of Personality and Social Psychology*, *42*(1), 116–131. https://doi.org/10.1037/0022-3514.42.1.116

Cacioppo, J. T., Petty, R. E., & Morris, K. J. (1983). Effects of need for cognition on message evaluation, recall, and persuasion. *Journal of Personality and Social Psychology*, *45*(4), 805–818. https://doi.org/10.1037/0022-3514.45.4.805

Calzada, I., Gomez-Garrido, M., Moreno, L., & Moreno-Fuentes, F. J. (2014). It is not only about equality: A study on the (other) values that ground attitudes to the welfare state. *International Journal of Public Opinion Research*, *26*(2), 178–201. https://doi.org/10.1093/ijpor/edt044

Cappella, J. N., & Hall Jamieson, K. (1996). News frames, political cynicism, and media cynicism. *The ANNALS of the American Academy of Political and Social Science*, *546*(1), 71–84. https://doi.org/10.1177/0002716296546001007

Carpenter, C. J. (2015). A meta-analysis of the ELM's argument quality × processing type predictions. *Human Communication Research*, *41*(4), 501–534. https://doi.org/10.1111/hcre.12054

Chadwick, A. (2017). *The hybrid media system: Politics and power* (2nd ed.). *Oxford studies in digital politics*. Oxford: Oxford University Press.

Chaiken, S., & Maheswaran, D. (1994). Heuristic processing can bias systematic processing: Effects of source credibility, argument ambiguity, and task importance on attitude judgment. *Journal of Personality and Social Psychology*, *66*(3), 460–473. https://doi.org/10.1037/0022-3514.66.3.460

Chernilo, D. (2002). The theorization of social co-ordinations in differentiated societies: The theory of generalized symbolic media in Parsons, Luhmann and Habermas. *The British Journal of Sociology*, *53*(3), 431–449. https://doi.org/10.1080/0007131022000000581

Chong, D. (2000). *Rational lives: Norms and values in politics and society*. Chicago: University of Chicago Press.

Chong, D., & Druckman, J. N. (2007a). Framing public opinion in competitive democracies. *American Political Science Review*, *101*(4), 637–655. https://doi.org/10.1017/S0003055407070554

Chong, D., & Druckman, J. N. (2007b). Framing theory. *Annual Review of Political Science*, *10*(1), 103–126. https://doi.org/10.1146/annurev.polisci.10.072805.103054

Chong, D., & Druckman, J. N. (2007c). A theory of framing and opinion formation in competitive elite environments. *Journal of Communication*, *57*(1), 99–118. https://doi.org/10.1111/j.1460-2466.2006.00331.x

Chong, D., & Druckman, J. N. (2010). Dynamic public opinion: Communication effects over time. *American Political Science Review*, *104*(04), 663–680. https://doi.org/10.1017/S0003055410000493

Chong, D., & Druckman, J. N. (2013). Counterframing effects. *The Journal of Politics*, *75*(1), 1–16. https://doi.org/10.1017/S0022381612000837

Ciuk, D. J., Lupton, R. N., & Thornton, J. R. (2017). Values voters: The conditional effect of income on the relationship between core values and political attitudes and behavior. *Political Psychology*, *57*(1), 176. https://doi.org/10.1111/pops.12442

Clifford, S. (2019). How emotional frames moralize and polarize political attitudes. *Political Psychology*, *40*(1), 75–91. https://doi.org/10.1111/pops.12507

Clifford, S., Jewell, R. M., & Waggoner, P. D. (2015). Are samples drawn from Mechanical Turk valid for research on political ideology? *Research & Politics*, *2*(4), 1-9. https://doi.org/10.1177/2053168015622072

Cobb, M. D. (2005). Framing effects on public opinion about nanotechnology. *Science Communication*, *27*(2), 221–239. https://doi.org/10.1177/1075547005281473

Cohen, J. (1983). The cost of dichotomization. *Applied Psychological Measurement*, *7*(3), 249–253. https://doi.org/10.1177/014662168300700301

Cohen, J. (1992). A power primer. *Psychological Bulletin*, *112*(1), 155–159. https://doi.org/10.1037/0033-2909.112.1.155

Conover, P. J., & Feldman, S. (1984). Group identification, values, and the nature of political beliefs. *American Politics Quarterly*, *12*(2), 151–175. https://doi.org/10.1177/1532673X8401200202

Converse, P. E. (2000). Assessing the capacity of mass electorates. *Annual Review of Political Science*, *3*(1), 331–353. https://doi.org/10.1146/annurev.polisci.3.1.331

Cooke, M. (2000). Five arguments for deliberative democracy. *Political Studies*, *48*(5), 947–969. https://doi.org/10.1111/1467-9248.00289

D'Angelo, P. (2002). News framing as a multiparadigmatic research program: A response to Entman. *Journal of Communication*, *52*(4), 870–888. https://doi.org/10.1111/j.1460-2466.2002.tb02578.x

D'Angelo, P., Lule, J., Neuman, W. R., Rodriguez, L., Dimitrova, D. V., & Carragee, K. M. (2019). Beyond framing: A forum for framing researchers. *Journalism & Mass Communication Quarterly*, *96*(1), 12-30. https://doi.org/10.1177/1077699018825004

Darlington, R. B., & Hayes, A. F. (2016). *Regression analysis and linear models: Concepts, applications, and implementation*. New York: Guilford Press.

De Vreese, C. H. (2004). The effects of frames in political television news on issue interpretation and frame salience. *Journalism & Mass Communication Quarterly*, *81*(1), 36–52. https://doi.org/10.1177/107769900408100104

De Vreese, C. H. (2005). News framing: Theory and typology. *Information Design Journal + Document Design*, *13*(1), 51–62. https://doi.org/10.1075/idjdd.13.1.06vre

De Vreese, C. H. (2012). New avenues for framing research. *American Behavioral Scientist*, *56*(3), 365–375. https://doi.org/10.1177/0002764211426331

De Vreese, C. H., Boomgaarden, H. G., & Semetko, H. A. (2011). (In)direct framing effects: The effects of news media framing on public support for Turkish membership in the European Union. *Communication Research*, *38*(2), 179–205. https://doi.org/10.1177/0093650210384934

De Vreese, C. H., & Elenbaas, M. (2008). Media in the game of politics: Effects of strategic metacoverage on political cynicism. *The International Journal of Press/Politics*, *13*(3), 285–309. https://doi.org/10.1177/1940161208319650

De Vreese, C. H., & Lecheler, S. K. (2012). News framing research: An overview and new developments. In H. A. Semetko & M. Scammell (Eds.), *The SAGE handbook of political communication* (pp. 292–306). London: Sage. https://doi.org/10.4135/9781446201015.n24

Dillard, J. P., & Shen, L. (2005). On the nature of reactance and its role in persuasive health communication. *Communication Monographs*, *72*(2), 144–168. https://doi.org/10.1080/03637750500111815

Domke, D., Shah, D. V., & Wackman, D. B. (1998). "Moral referendums": Values, news media, and the process of candidate choice. *Political Communication*, *15*(3), 301–321. https://doi.org/10.1080/105846098198911

Downs, A. (1957). An economic theory of political action in a democracy. *Journal of Political Economy*, *65*(2), 135–150. https://doi.org/10.1086/257897

Druckman, J. N. (2001a). The implications of framing effects for citizen competence. *Political Behavior*, *23*(3), 225–256. https://doi.org/10.1023/A:1015006907312

Druckman, J. N. (2001b). On the limits of framing effects: Who can frame? *The Journal of Politics*, *63*(4), 1041–1066. https://doi.org/10.1111/0022-3816.00100

Druckman, J. N. (2001c). Using credible advice to overcome framing effects. *Journal of Law, Economics, and Organization*, *17*(1), 62–82. https://doi.org/10.1093/jleo/17.1.62

Druckman, J. N. (2004). Political preference formation: Competition, deliberation, and the (ir)relevance of framing effects. *American Political Science Review*, *98*(4), 671–686. https://doi.org/10.1017/S0003055404041413

Druckman, J. N., & Bolsen, T. (2011). Framing, motivated reasoning, and opinions about emergent technologies. *Journal of Communication*, *61*(4), 659–688. https://doi.org/10.1111/j.1460-2466.2011.01562.x

Druckman, J. N., Green, D. P., Kuklinski, J. H., & Lupia, A. (2011). Experiments: An introduction to core concepts. In J. N. Druckman, D. P. Green, J. H. Kuklinski, & A. Lupia (Eds.), *Cambridge handbook of experimental political science* (pp. 15–26). Cambridge: Cambridge University Press.

Druckman, J. N., & Leeper, T. J. (2012). Learning more from political communication experiments: Pretreatment and its effects. *American Journal of Political Science*, *56*(4), 875–896. https://doi.org/10.1111/j.1540-5907.2012.00582.x

Druckman, J. N., & McDermott, R. (2008). Emotion and the framing of risky choice. *Political Behavior*, *30*(3), 297–321. https://doi.org/10.1007/s11109-008-9056-y

Druckman, J. N., & Nelson, K. R. (2003). Framing and deliberation: How citizens' conversations limit elite influence. *American Journal of Political Science*, *47*(4), 729–745. https://doi.org/10.1111/1540-5907.00051

Druckman, J. N., Peterson, E., & Slothuus, R. (2013). How elite partisan polarization affects public opinion formation. *American Political Science Review*, *107*(1), 57–79. https://doi.org/10.1017/S0003055412000500

Edy, J. A., & Meirick, P. C. (2007). Wanted, dead or alive: Media frames, frame adoption, and support for the war in Afghanistan. *Journal of Communication*, *57*(1), 119–141. https://doi.org/10.1111/j.1460-2466.2006.00332.x

Eells, E. (1991). *Probabilistic causality*. Cambridge: Cambridge University Press.

Elenbaas, M., & Vreese, C. H. de (2008). The effects of strategic news on political cynicism and vote choice among young voters. *Journal of Communication*, *58*(3), 550–567. https://doi.org/10.1111/j.1460-2466.2008.00399.x

Entman, R. M. (1989). How the media affect what people think: An information processing approach. *The Journal of Politics*, *51*(2), 347–370. https://doi.org/10.2307/2131346

Entman, R. M. (1993). Framing: Toward clarification of a fractured paradigm. *Journal of Communication*, *43*(4), 51–58. https://doi.org/10.1111/j.1460-2466.1993.tb01304.x

Entman, R. M. (2004). *Projections of power: Framing news, public opinion, and US foreign policy*. Chicago: University of Chicago Press.

Entman, R. M., Matthes, J., & Pellicano, L. (2009). Nature, sources, and effects of news framing. In K. Wahl-Jorgensen & T. Hanitzsch (Eds.), *The handbook of journalism studies* (pp. 175–190). New York: Routledge.

Fabrigar, L. R., Priester, J. R., Petty, R. E., & Wegener, D. T. (1998). The impact of attitude accessibility on elaboration of persuasive messages. *Personality and Social Psychology Bulletin*, *24*(4), 339–352. https://doi.org/10.1177/0146167298244001

Fagerlin, A., Zikmund-Fisher, B. J., Ubel, P. A., Jankovic, A., Derry, H. A., & Smith, D. M. (2007). Measuring numeracy without a math test: Development of the subjective numeracy scale. *Medical Decision Making*, *27*(5), 672–680. https://doi.org/10.1177/0272989X07304449

Fanelli, D. (2012). Negative results are disappearing from most disciplines and countries. *Scientometrics*, *90*(3), 891–904. https://doi.org/10.1007/s11192-011-0494-7

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, *39*(2), 175–191. https://doi.org/10.3758/BF03193146

Feinholdt, A., Schuck, A. R. T., Lecheler, S. K., & de Vreese, C. H. (2017). Shifting frames: Conditional indirect effects of contested issues on perceived effectiveness

through multiple emotions. *Journal of Media Psychology*, *29*(2), 1–11. https://doi.org/10.1027/1864-1105/a000165

Feldman, S. (1988). Structure and consistency in public opinion: The role of core beliefs and values. *American Journal of Political Science*, *32*(2), 416–440. https://doi.org/10.2307/2111130

Feldman, S., & Johnston, C. (2014). Understanding the determinants of political ideology: Implications of structural complexity. *Political Psychology*, *35*(3), 337–358. https://doi.org/10.1111/pops.12055

Feldman, S., & Steenbergen, M. R. (2001). The humanitarian foundation of public support for social welfare. *American Journal of Political Science*, *45*(3), 658. https://doi.org/10.2307/2669244

Feldman, S., & Zaller, J. (1992). The Political culture of ambivalence: Ideological responses to the welfare state. *American Journal of Political Science*, *36*(1), 268. https://doi.org/10.2307/2111433

Festinger, L. (1962). Cognitive dissonance. *Scientific American*, *207*(4), 93–106. https://doi.org/10.1038/scientificamerican1062-93

Field, A. (2009). *Discovering statistics using SPSS* (3rd ed.). London: Sage.

Field, A., Miles, J., & Field, Z. (2012). *Discovering statistics using R*. Los Angeles: Sage.

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention and behavior: An introduction to theory and research*. Reading: Addison-Wesley.

Fiske, S. T., & Taylor, S. E. (1991). *Social cognition* (2nd ed.). *McGraw-Hill series in social psychology*. New York: McGraw-Hill.

Flubacher, R. (2016, March 4). Mehr Transparenz bei teurem Medikament [More transparency of expensive medicament]. *Tagesanzeiger*. Retrieved from https://www.tagesanzeiger.ch/wirtschaft/standard/Mehr-Transparenz-bei-teurem-Medikament/story/31951455

Furger, M., & Voigt, B. (2018, September 8). Mia ist krank, aber ihr Medikament kostet 150 000 Franken – über das Machtspiel der Pharmaindustrie [Mia is ill but her medicament costs 150000 francs - toward the game of power of pharmaceutical industry]. *NZZ Am Sonntag*. Retrieved from https://nzzas.nzz.ch/hintergrund/vertex-orkambi-mia-ist-krank-aber-ihr-medikament-kostet-150-000-franken-ueber-das-machtspiel-pharmaindustrie-ld.1418469?reduced=true

Gaines, B. J., Kuklinski, J. H., & Quirk, P. J. (2007). The logic of the survey experiment reexamined. *Political Analysis*, *15*(1), 1–20. https://doi.org/10.1093/pan/mpl008

Gamson, W. A. (1989). News as framing: Comments on Graber. *American Behavioral Scientist*, *33*(2), 157–161. https://doi.org/10.1177/0002764289033002006

Gamson, W. A., & Modigliani, A. (1989). Media discourse and public opinion on nuclear power: A constructionist approach. *American Journal of Sociology*, *95*(1), 1–37. https://doi.org/10.1086/229213

Gigerenzer, G., & Goldstein, D. G. (1996). Reasoning the fast and frugal way: Models of bounded rationality. *Psychological Review*, *103*(4), 650–669. https://doi.org/10.1037/0033-295X.103.4.650

Goffman, E. (1974). *Frame analysis: An essay on the organization of experience*. Cambridge: Harvard University Press.

Goren, P. (2001). Core principles and policy reasoning in mass publics: A test of two theories. *British Journal of Political Science*, *31*(1). https://doi.org/10.1017/S0007123401000072

Goren, P. (2005). Party identification and core political values. *American Journal of Political Science*, *49*(4), 881. https://doi.org/10.2307/3647703

Goren, P., Schoen, H., Reifler, J., Scotto, T., & Chittick, W. (2016). A Unified theory of value-based reasoning and U.S. public opinion. *Political Behavior*, *38*(4), 977–997. https://doi.org/10.1007/s11109-016-9344-x

Gravetter, F. J., & Forzano, L.-A. B. (2018). *Research methods for the behavioral sciences* (6th ed.). Boston: Cengage.

Gross, K., & D'Ambrosio, L. (2004). Framing emotional response. *Political Psychology*, *25*(1), 1–29. https://doi.org/10.1111/j.1467-9221.2004.00354.x

Haddock, G., Rothman, A. J., Reber, R., & Schwarz, N. (1999). Forming judgments of attitude certainty, intensity, and importance: The role of subjective experiences. *Personality and Social Psychology Bulletin*, *25*(7), 771–782. https://doi.org/10.1177/0146167299025007001

Hahn, U., & Oaksford, M. (2006). A normative theory of argument strength. *Informal Logic*, *26*(1), 1–24. https://doi.org/10.22329/il.v26i1.428

Haider-Markel, D. P., & Joslyn, M. R. (2001). Gun policy, tragedy, and blame attribution: The conditional influences of issue frames. *The Journal of Politics*, *63*(2), 520–543. https://doi.org/10.1111/0022-3816.00077

Hallin, D. C., & Mancini, P. (2004). *Comparing media systems: Three models of media and politics*. Cambridge: Cambridge University Press.

Hameleers, M., & Vliegenthart, R. (2016). Framing the participatory society: Measuring discrepancies between interpretation frames and media frames. *International Journal of Public Opinion Research*, 257–281. https://doi.org/10.1093/ijpor/edw032

Han, G., Chock, T. M., & Shoemaker, P. J. (2009). Issue familiarity and framing effects of online campaign coverage: Event perception, issue attitudes, and the 2004 presidential election in Taiwan. *Journalism & Mass Communication Quarterly*, *86*(4), 739–755. https://doi.org/10.1177/107769900908600402

Han, J., & Federico, C. M. (2018). The polarizing effect of news framing: Comparing the mediating roles of motivated reasoning, self-stereotyping, and intergroup animus. *Journal of Communication*, *68*(4), 685–711. https://doi.org/10.1093/joc/jqy025

Hänggli, R., & Kriesi, H. (2010). Political framing strategies and their impact on media framing in a Swiss direct-democratic campaign. *Political Communication*, *27*(2), 141–157. https://doi.org/10.1080/10584600903501484

Hänggli, R., & Kriesi, H. (2012). Frame construction and frame promotion (strategic framing choices). *American Behavioral Scientist*, *56*(3), 260–278. https://doi.org/10.1177/0002764211426325

Hansen, K. J. (2019). Who cares if they need help? The deservingness heuristic, humanitarianism, and welfare opinions. *Political Psychology*, *40*(2), 413–430. https://doi.org/10.1111/pops.12506

Hansen, K. M. (2007). The sophisticated public: The effect of competing frames on public opinion. *Scandinavian Political Studies*, *30*(3), 377–396. https://doi.org/10.1111/j.1467-9477.2007.00185.x

Hartman, T. K., & Weber, C. R. (2009). Who said what? The effects of source cues in issue frames. *Political Behavior*, *31*(4), 537–558. https://doi.org/10.1007/s11109-009-9088-y

Hastie, R., & Park, B. (1986). The relationship between memory and judgment depends on whether the judgment task is memory-based or on-line. *Psychological Review*, *93*(3), 258–268. https://doi.org/10.1037/0033-295X.93.3.258

Haugtvedt, C. P., & Petty, R. E. (1992). Personality and persuasion: Need for cognition moderates the persistence and resistance of attitude changes. *Journal of Personality and Social Psychology*, *63*(2), 308–319. https://doi.org/10.1037/0022-3514.63.2.308

Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (2nd ed.). New York, London: The Guilford Press.

Hehli, S. (2018, March 14). Der Bundesrat will ein 160 000 Franken teures Medikament gegen zystische Fibrose nicht kassenpflichtig machen. Die Betroffenen wehren sich [The federal council do not want to approve a 160000 francs expensive medicament against cystic fibrosis. The affected people fight back]. *Neue Zürcher Zeitung*. Retrieved from https://www.nzz.ch/schweiz/bund-verzoegert-zugang-zu-160000-franken-medikament-ld.1365687

Herzog, A. R., & Bachman, J. G. (1981). Effects of questionnaire length on response quality. *Public Opinion Quarterly*, *45*(4), 549–559. https://doi.org/10.1086/268687

Higgins, E. T. (1996). Knowledge activation: Accessibility, applicability, and salience. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology. Handbook of basic principles* (pp. 133–168). News York, London: The Guilford Press.

Hitlin, S., & Pinkston, K. (2013). Values, attitudes, and ideologies: Explicit and implicit constructs shaping perception and action. In J. D. DeLamater & A. Ward (Eds.), *Handbooks of Sociology and Social Research. Handbook of social psychology* (2nd ed., Vol. 24, pp. 319–339). New York: Springer. https://doi.org/10.1007/978-94-007-6772-0_11

Hoeken, H., Timmers, R., & Schellens, P. J. (2012). Arguing about desirable consequences: What constitutes a convincing argument? *Thinking & Reasoning*, *18*(3), 394–416. https://doi.org/10.1080/13546783.2012.669986

Hoffman, L. H., & Slater, M. D. (2007). Evaluating public discourse in newspaper opinion articles: Values-framing and integrative complexity in substance and health policy issues. *Journalism & Mass Communication Quarterly*, *84*(1), 58–74. https://doi.org/10.1177/107769900708400105

Holbert, R. L., & Stephenson, M. T. (2003). The importance of indirect effects in media effects research: Testing for mediation in structural equation modeling. *Journal of Broadcasting & Electronic Media*, *47*(4), 556–572. https://doi.org/10.1207/s15506878jobem4704_5

Hooghe, L., Marks, G., & Wilson, C. J. (2002). Does left/right structure party positions on European integration? *Comparative Political Studies*, *35*(8), 965–989. https://doi.org/10.1177/001041402236310

Hopkins, D. J., & Mummolo, J. (2017). Assessing the breadth of framing effects. *Quarterly Journal of Political Science*, *12*(1), 37–57. https://doi.org/10.1561/100.00015139_app

Hopmann, D. N., van Aelst, P., & Legnante, G. (2012). Political balance in the news: A review of concepts, operationalizations and key findings. *Journalism: Theory, Practice & Criticism*, *13*(2), 240–257. https://doi.org/10.1177/1464884911427804

Hovland, C. I., & Weiss, W. (1951). The influence of source credibility on communication effectiveness. *Public Opinion Quarterly*, *15*(4), 635. https://doi.org/10.1086/266350

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Huang, H. (2010). Frame-rich, frame-poor: An investigation of the contingent effects of media frame diversity and individual differences on audience frame diversity. *International Journal of Public Opinion Research*, *22*(1), 47–73. https://doi.org/10.1093/ijpor/edp024

Igartua, J.-J., & Cheng, L. (2009). Moderating effect of group cue while processing news on immigration: Is the framing effect a heuristic process? *Journal of Communication*, *59*(4), 726–749. https://doi.org/10.1111/j.1460-2466.2009.01454.x

Igartua, J.-J., Moral-Toranzo, F., & Fernández, I. (2011). Cognitive, attitudinal, and emotional effects of news frame and group cues, on processing news about immigration. *Journal of Media Psychology*, *23*(4), 174–185. https://doi.org/10.1027/1864-1105/a000050

Inglehart, R., & Abramson, P. R. (1994). Economic security and value change. *American Political Science Review*, *88*(2), 336–354. https://doi.org/10.2307/2944708

Inglehart, R., & Baker, W. E. (2000). Modernization, cultural change, and the persistence of traditional values. *American Sociological Review*, *65*(1), 19–51. https://doi.org/10.2307/2657288

Iyengar, S. (1991). *Is anyone responsible? How television frames political issues*. Chicago, London: The University of Chicago Press.

Jacoby, W. G. (2000). Issue framing and public opinion on government spending. *American Journal of Political Science*, *44*(4), 750-767. https://doi.org/10.2307/2669279

Jacoby, W. G. (2006). Value choices and American public opinion. *American Journal of Political Science*, *50*(3), 706–723. https://doi.org/10.1111/j.1540-5907.2006.00211.x

Jacoby, W. G. (2014). Is there a culture war? Conflicting value structures in American public opinion. *American Political Science Review*, *108*(4), 754–771. https://doi.org/10.1017/S0003055414000380

Jarvis, W. B. G., & Petty, R. E. (1996). The need to evaluate. *Journal of Personality and Social Psychology*, *70*(1), 172–194. https://doi.org/10.1037/0022-3514.70.1.172

Jost, J. T., Federico, C. M., & Napier, J. L. (2009). Political ideology: Its structure, functions, and elective affinities. *Annual Review of Psychology*, *60*, 307–337. https://doi.org/10.1146/annurev.psych.60.110707.163600

Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, *47*(2), 263–291. https://doi.org/10.2307/1914185

Kahneman, D., & Tversky, A. (1984). Choices, values, and frames. *American Psychologist*, *39*(4), 341–350. https://doi.org/10.1037//0003-066X.39.4.341

Kaiser, J. (2019a). Disentangling the effects of thematic information and emphasis frames and the suppression of issue-specific argument effects through value-resonant framing. *Political Communication*, 1–19. https://doi.org/10.1080/10584609.2019.1658662

Kaiser, J. (2019b). *Emphasis framing effects in political communication: Disentangling the effects of thematic information and emphasis frames and the suppression of issue-specific argument effects through value-resonant framing [Dataset and project documentation]*. Lausanne: FORSbase. https://doi.org/10.23662/FORS-DS-1013-1

Kaiser, J., Keller, T. R., & Kleinen-von Königslöw, K. (2018). Incidental news exposure on Facebook as a social experience: The influence of recommender and media cues on news selection. *Communication Research*, 1-23. https://doi.org/10.1177/0093650218803529

Kaiser, J., & Kleinen-von Königslöw, K. (2017). The framing of the Euro crisis in German and Spanish online news media between 2010 and 2014: Does a common European public discourse emerge? *JCMS: Journal of Common Market Studies*, *55*(4), 798–814. https://doi.org/10.1111/jcms.12515

Kaiser, J., & Kleinen-von Königslöw, K. (2019). Partisan journalism and the issue framing of the Euro crisis: Comparing political parallelism of German and Spanish online news. *Journalism*, *20*(2), 331-348. https://doi.org/10.1177/1464884916683548

Katz, I., & Hass, R. G. (1988). Racial ambivalence and American value conflict: Correlational and priming studies of dual cognitive structures. *Journal of Personality and Social Psychology*, *55*(6), 893–905. https://doi.org/10.1037/0022-3514.55.6.893

Kellstedt, P. M. (2000). Media framing and the dynamics of racial policy preferences. *American Journal of Political Science*, *44*(2), 245–260. https://doi.org/10.2307/2669308

Kepplinger, H. M., Geiß, S., & Siebert, S. (2012). Framing scandals: Cognitive and emotional media effects. *Journal of Communication*, *62*(4), 659–681. https://doi.org/10.1111/j.1460-2466.2012.01653.x

Kidd, R. F. (1976). Manipulation checks: Advantage or disadvantage? *Representative Research in Social Psychology*, *7*(2), 160–165. Retrieved from https://psycnet.apa.org/record/1977-28595-001

Kim, H. J., & Cameron, G. T. (2011). Emotions matter in crisis. *Communication Research*, *38*(6), 826–855. https://doi.org/10.1177/0093650210385813

Kim, S.-H., Carvalho, J. P., & Davis, A. G. (2010). Talking about poverty: News framing of who is responsible for causing and fixing the problem. *Journalism and Mass Communication Quarterly*, *87*(3/4), 563–581. https://doi.org/10.1177/107769901008700308

Kinder, D. R. (2003). Communication and politics in the age of information. In D. O. Sears, L. Huddy, & R. Jervis (Eds.), *Oxford handbook of political psychology* (pp. 357–393). Oxford: Oxford University Press.

Kleinnijenhuis, J., Schultz, F., & Oegema, D. (2015). Frame complexity and the financial crisis: A comparison of the United States, the United Kingdom, and Germany in the period 2007-2012. *Journal of Communication*, *65*(1), 1–23. https://doi.org/10.1111/jcom.12141

Koch, T., & Peter, C. (2017). Effects of equivalence framing on the perceived truth of political messages and the trustworthiness of politicians. *Public Opinion Quarterly*, *81*(4), 847–865. https://doi.org/10.1093/poq/nfx019

Köthenbürger, M., & Sandqvist, P. (2018). *KOF Prognose der Gesundheitsausgaben Frühjahr 2018 [KOF projection of health expenditures spring 2018]*. Retrieved from KOF Konjunkturforschungsstelle ETH Zurich website: https://www.ethz.ch/content/dam/ethz/special-interest/dual/kof-dam/documents/Publications/No_113_Gesundheitsausgaben_Fr%C3%BChjahr_2018.pdf

Kriesi, H. (2010). Restructuration of partisan politics and the emergence of a new cleavage based on values. *West European Politics*, *33*(3), 673–685. https://doi.org/10.1080/01402381003654726

Kriesi, H., Grande, E., Lachat, R., Dolezal, M., Bornschier, S., & Frey, T. (2006). Globalization and the transformation of the national political space: Six European

countries compared. *European Journal of Political Research*, *45*(6), 921–956. https://doi.org/10.1111/j.1475-6765.2006.00644.x

Krippendorff, K. (2017). Three concepts to retire. *Annals of the International Communication Association*, *41*(1), 92–99. https://doi.org/10.1080/23808985.2017.1291281

Kroh, M. (2007). Measuring left-right political orientation: The choice of response format. *Public Opinion Quarterly*, *71*(2), 204–220. https://doi.org/10.1093/poq/nfm009

Krosnick, J. A., Boninger, D. S., Chuang, Y. C., Berent, M. K., & Carnot, C. G. (1993). Attitude strength: One construct or many related constructs? *Journal of Personality and Social Psychology*, *65*(6), 1132–1151. https://doi.org/10.1037/0022-3514.65.6.1132

Krosnick, J. A., Lavrakas, P. J., & Kim, N. (2014). Survey research. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (2nd ed., pp. 404–442). New York: Cambridge University Press. https://doi.org/10.1017/CBO9780511996481.020

Krosnick, J. A., & Petty, R. E. (1995). Attitude strength: An overview. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 1–24). Mahwah, NJ: Lawrence Erlbaum.

Kruglanski, A. W., & Boyatzi, L. M. (2012). The psychology of closed and open mindedness, rationality, and democracy. *Critical Review*, *24*(2), 217–232. https://doi.org/10.1080/08913811.2012.711023

Kruglanski, A. W., & Orehek, E. (2009). Toward a relativity theory of rationality. *Social Cognition*, *27*(5), 639–660. https://doi.org/10.1521/soco.2009.27.5.639

Kruglanski, A. W., Webster, D. M., & Klem, A. (1993). Motivated resistance and openness to persuasion in the presence or absence of prior information. *Journal of Personality and Social Psychology*, *65*(5), 861–876. https://doi.org/10.1037//0022-3514.65.5.861

Kühne, R. (2013). Emotionale Framing-Effekte auf Einstellungen: Ein integratives Modell [Emotional framing effects on attitudes: An integrative model]. *Medien & Kommunikationswissenschaft*, *61*(1), 5–20. https://doi.org/10.5771/1615-634x-2013-1-5

Kühne, R. (2014). *Political news, emotions, and opinion formation: Toward a model of emotional framing effects* (NCCR Working papers No. 68). Retrieved from http://www.nccr-democracy.uzh.ch/publications/workingpaper/pdf/wp_68.pdf

Kühne, R., & Schemer, C. (2015). The emotional effects of news frames on information processing and opinion formation. *Communication Research*, *42*(3), 387–407. https://doi.org/10.1177/0093650213514599

Kühne, R., Weber, P., & Sommer, K. (2015). Beyond cognitive framing processes: Anger mediates the effects of responsibility framing on the preference for punitive measures. *Journal of Communication*, *65*(2), 259–279. https://doi.org/10.1111/jcom.12151

Kunda, Z. (1990). The case for motivated reasoning. *Psychological Bulletin*, *108*(3), 480–498. https://doi.org/10.1037/0033-2909.108.3.480

LeBel, E. P., McCarthy, R. J., Earp, B. D., Elson, M., & Vanpaemel, W. (2018). A unified framework to quantify the credibility of scientific findings. *Advances in Methods and Practices in Psychological Science*, *1*(3), 389–402. https://doi.org/10.1177/2515245918787489

Lecheler, S. K., Bos, L., & Vliegenthart, R. (2015). The mediating role of emotions: News framing effects on opinions about immigration. *Journalism & Mass Communication Quarterly*, *92*(4), 812–838. https://doi.org/10.1177/1077699015596338

Lecheler, S. K., & de Vreese, C. H. (2011). Getting real: The duration of framing effects. *Journal of Communication*, *61*(5), 959–983. https://doi.org/10.1111/j.1460-2466.2011.01580.x

Lecheler, S. K., & de Vreese, C. H. (2012). News framing and public opinion: A mediation analysis of framing effects on political attitudes. *Journalism & Mass Communication Quarterly*, *89*(2), 185–204. https://doi.org/10.1177/1077699011430064

Lecheler, S. K., & de Vreese, C. H. (2013). What a difference a day makes?: The effects of repetitive and competitive news framing over time. *Communication Research*, *40*(2), 147–175. https://doi.org/10.1177/0093650212470688

Lecheler, S. K., & de Vreese, C. H. (2018). *News framing effects*. New York: Routledge.

Lecheler, S. K., de Vreese, C. H., & Slothuus, R. (2009). Issue importance as a moderator of framing effects. *Communication Research*, *36*(3), 400–425. https://doi.org/10.1177/0093650209333028

Lecheler, S. K., Keer, M., Schuck, A. R. T., & Hänggli, R. (2015). The effects of repetitive news framing on political opinions over time. *Communication Monographs*, *82*(3), 339–358. https://doi.org/10.1080/03637751.2014.994646

Lecheler, S. K., Schuck, A. R. T., & de Vreese, C. H. (2013). Dealing with feelings: Positive and negative discrete emotions as mediators of news framing effects. *Communications*, *38*(2). https://doi.org/10.1515/commun-2013-0011

Leeper, T. J., & Slothuus, R. (2017). Can citizens be framed? How information more than emphasis changes opinions. Retrieved from https://s3.us-east-2.amazonaws.com/tjl-sharing/assets/CanCitizensBeFramed.pdf

Levin, I. P., Schneider, S. L., & Gaeth, G. J. (1998). All frames are not created equal: A typology and critical analysis of framing effects. *Organizational Behavior and Human Decision Processes*, *76*(2), 149–188. https://doi.org/10.1006/obhd.1998.2804

Lilleker, D. G. (2006). Permanent Campaigning. In D. G. Lilleker (Ed.), *SAGE key concepts. Key concepts in political communication* (pp. 144–147). London: Sage. https://doi.org/10.4135/9781446212943.n35

Liu, J. H., & Hilton, D. J. (2005). How the past weighs on the present: Social representations of history and their role in identity politics. *The British Journal of Social Psychology*, *44*(4), 537–556. https://doi.org/10.1348/014466605X27162

Loken, E., & Gelman, A. (2017). Measurement error and the replication crisis. *Science*, *355*(6325), 584–585. https://doi.org/10.1126/science.aal3618

MacCallum, R. C., Zhang, S., Preacher, K. J., & Rucker, D. D. (2002). On the practice of dichotomization of quantitative variables. *Psychological Methods*, *7*(1), 19–40. https://doi.org/10.1037/1082-989X.7.1.19

Maheswaran, D., & Chaiken, S. (1991). Promoting systematic processing in low-motivation settings: Effect of incongruent information on processing and judgment. *Journal of Personality and Social Psychology*, *61*(1), 13–25. https://doi.org/10.1037/0022-3514.61.1.13

Maio, G. R., Olson, J. M., Bernard, M. M., & Luke, M. A. (2006). Ideologies, values, attitudes, and behavior. In J. D. DeLamater (Ed.), *Handbooks of Sociology and Social Research. Handbook of social psychology* (Vol. 20, pp. 283–308). New York: Springer. https://doi.org/10.1007/0-387-36921-X_12

Matthes, J. (2007a). Beyond accessibility? Toward an on-line and memory-based model of framing effects. *Communications*, *32*(1), 51–78. https://doi.org/10.1515/COMMUN.2007.003

Matthes, J. (2007b). *Framing-Effekte: Zum Einfluss der Politikberichterstattung auf die Einstellungen der Rezipienten [Framing effects: Toward the influence of political media coverage on recipients' attitudes]. Reihe Rezeptionsforschung: Vol. 13*. München: Verlag Reinhard Fischer.

Matthes, J. (2008). Media frames and political judgments: Exploring the boundaries of framing effects in a two-wave panel study. *Studies in Communication Science*, *8*(2 & 3), 251–278. Retrieved from https://www.e-periodica.ch/digbib/view?pid=sco-003:2008:8::572#572

Matthes, J. (2009). What's in a frame? A content analysis of media framing studies in the world's leading communication journals 1990-2005. *Journalism & Mass Communication Quarterly*, *86*(2), 349–367. https://doi.org/10.1177/107769900908600206

Matthes, J. (2012). Framing politics: An integrative approach. *American Behavioral Scientist*, *56*(3), 247–259. https://doi.org/10.1177/0002764211426324

Matthes, J., & Kohring, M. (2008). The content analysis of media frames: Toward improving reliability and validity. *Journal of Communication*, *58*(2), 258–279. https://doi.org/10.1111/j.1460-2466.2008.00384.x

Matthes, J., Marquart, F., Naderer, B., Arendt, F., Schmuck, D., & Adam, K. (2015). Questionable research practices in experimental communication research: A systematic analysis from 1980 to 2013. *Communication Methods and Measures*, *9*(4), 193–207. https://doi.org/10.1080/19312458.2015.1096334

Matthes, J., & Schemer, C. (2012). Diachronic framing effects in competitive opinion environments. *Political Communication*, *29*(3), 319–339. https://doi.org/10.1080/10584609.2012.694985

Matthes, J., Wirth, W., & Schemer, C. (2007). Measuring the unmeasurable? Toward operationalizing on-line and memory-based political judgments in surveys. *International Journal of Public Opinion Research*, *19*(2), 247–257. https://doi.org/10.1093/ijpor/edm001

McCombs, M. E., & Ghanem, S. L. (2001). The convergence of agenda setting and framing. In S. D. Reese, O. H. Gandy JR., & A. E. Grant (Eds.), *Framing public life: Perspectives on media and our understanding of the social world* (pp. 67–82). Mahwah: Lawrence Erlbaum.

Meade, A. W., & Craig, S. B. (2012). Identifying careless responses in survey data. *Psychological Methods*, *17*(3), 437–455. https://doi.org/10.1037/a0028085

Menold, N., & Bogner, K. (2016). *Design of rating scales in questionnaires* (GESIS Survey Guidelines). Mannheim, Germany. https://doi.org/10.15465/gesis-sg_en_015

Mérola, V., & Hitt, M. P. (2016). Numeracy and the persuasive effect of policy information and party cues. *Public Opinion Quarterly*, *80*(2), 554–562. https://doi.org/10.1093/poq/nfv051

Miles, J. (2005). Tolerance and variance inflation factor. In B. S. Everitt & D. C. Howell (Eds.), *Encyclopedia of statistics in behavioral science*. Chichester: Wiley. https://doi.org/10.1002/0470013192.bsa683

Miller, R. L. (1976). Mere exposure, psychological reactance, and attitude change. *Public Opinion Quarterly*, *40*(2), 229. https://doi.org/10.1086/268290

Nabi, R. L. (2003). Exploring the framing effects of emotion: Do discrete emotions differentially influence information accessibility, information seeking, and policy preference? *Communication Research*, *30*(2), 224–247. https://doi.org/10.1177/0093650202250881

Nadeau, R., Cloutier, E., & Guay, J.-H. (1993). New evidence about the existence of a bandwagon effect in the opinion formation process. *International Political Science Review*, *14*(2), 203–213. https://doi.org/10.1177/019251219301400204

Nelson, T. E. (2004). Policy goals, public rhetoric, and political attitudes. *The Journal of Politics*, *66*(2), 581–605. https://doi.org/10.1111/j.1468-2508.2004.00165.x

Nelson, T. E., Clawson, R. A., & Oxley, Z. M. (1997). Media framing of a civil liberties conflict and its effect on tolerance. *American Political Science Review*, *91*(3), 567–583. https://doi.org/10.2307/2952075

Nelson, T. E., & Garst, J. (2005). Values-based political messages and persuasion: Relationships among speaker, recipient, and evoked values. *Political Psychology*, *26*(4), 489–515. https://doi.org/10.1111/j.1467-9221.2005.00428.x

Nelson, T. E., & Kinder, D. R. (1996). Issue frames and group-centrism in American public opinion. *The Journal of Politics*, *58*(4), 1055–1078. https://doi.org/10.2307/2960149

Nelson, T. E., Lecheler, S. K., Schuck, A. R. T., & de Vreese, C. H. (2015). Value poaching: Framing the same values for competing political ends. *International Journal of Communication*, *9*, 2881–2902. Retrieved from http://ijoc.org/index.php/ijoc/article/view/3233/1459

Nelson, T. E., & Oxley, Z. M. (1999). Issue framing effects on belief importance and opinion. *The Journal of Politics*, *61*(4), 1040–1067. https://doi.org/10.2307/2647553

Nelson, T. E., Oxley, Z. M., & Clawson, R. A. (1997). Toward a psychology of framing effects. *Political Behavior*, *19*(3), 221–246. https://doi.org/10.1023/A:1024834831093

Neuman, W. R., & Guggenheim, L. (2011). The evolution of media effects theory: A six-stage model of cumulative research. *Communication Theory*, *21*(2), 169–196. https://doi.org/10.1111/j.1468-2885.2011.01381.x

Nisbet, E. C., Hart, P. S., Myers, T., & Ellithorpe, M. (2013). Attitude change in competitive framing environments? Open-/closed-mindedness, framing effects, and climate change. *Journal of Communication*, *63*(4), 766–785. https://doi.org/10.1111/jcom.12040

O'Keefe, D. J. (2003). Message properties, mediating states, and manipulation checks: Claims, evidence, and data analysis in experimental persuasive message effects research. *Communication Theory*, *13*(3), 251–274. https://doi.org/10.1111/j.1468-2885.2003.tb00292.x

Open Science Collaboration (2015). Estimating the reproducibility of psychological science. *Science*, *349*(6251), 943-951. https://doi.org/10.1126/science.aac4716

Osmundsen, M., & Petersen, M. B. (2019). Framing political risks: Individual differences and loss aversion in personal and political situations. *Political Psychology*, 1-18. https://doi.org/10.1111/pops.12587

Pan, P.-L., Meng, J., & Zhou, S. (2010). Morality or equality? Ideological framing in news coverage of gay marriage legitimization. *The Social Science Journal*, *47*(3), 630–645. https://doi.org/10.1016/j.soscij.2010.02.002

Pan, Z., & Kosicki, G. M. (1993). Framing analysis: An approach to news discourse. *Political Communication*, *10*, 55–75. https://doi.org/10.1080/10584609.1993.9962963

Pan, Z., & Kosicki, G. M. (2001). Framing as a strategic action in public deliberation. In S. D. Reese, O. H. Gandy JR., & A. E. Grant (Eds.), *Framing public life: Perspectives on media and our understanding of the social world* (pp. 35–65). Mahwah: Lawrence Erlbaum.

Park, H. S., Levine, T. R., Kingsley Westerman, C. Y., Orfgen, T., & Foregger, S. (2007). The effects of argument quality and involvement type on attitude formation and attitude change: A test of dual-process and social judgment predictions. *Human Communication Research*, *33*(1), 81–102. https://doi.org/10.1111/j.1468-2958.2007.00290.x

Patterson, T. E., & Donsbach, W. (1996). News decisions: Journalists as partisan actors. *Political Communication*, *13*(4), 455–468. https://doi.org/10.1080/10584609.1996.9963131

Pedersen, R. T. (2016). Ratio bias and policy preferences: How equivalency framing of numbers can affect attitudes. *Political Psychology*, *80*(4), 1–18. https://doi.org/10.1111/pops.12362

Pedersen, R. T., & Larsen, M. V. (2018). Putting a number on preferences: How numerical attitudes are shaped by ideology and equivalency framing. *International Journal of Public Opinion Research*, 1–21. https://doi.org/10.1093/ijpor/edy020

Petrocelli, J. V., Tormala, Z. L., & Rucker, D. D. (2007). Unpacking attitude certainty: Attitude clarity and attitude correctness. *Journal of Personality and Social Psychology*, *92*(1), 30–41. https://doi.org/10.1037/0022-3514.92.1.30

Petty, R. E., & Cacioppo, J. T. (1979). Issue involvement can increase or decrease persuasion by enhancing message-relevant cognitive responses. *Journal of Personality and Social Psychology*, *37*(10), 1915–1926. https://doi.org/10.1037/0022-3514.37.10.1915

Petty, R. E., & Cacioppo, J. T. (1986). The elaboration likelihood model of persuasion. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (pp. 123–205). Orlando, FL: Academic Press.

Petty, R. E., Cacioppo, J. T., & Schumann, D. (1983). Central and peripheral routes to advertising effectiveness: The moderating role of involvement. *Journal of Consumer Research*, *10*(2), 135. https://doi.org/10.1086/208954

Piurko, Y., Schwartz, S. H., & Davidov, E. (2011). Basic personal values and the meaning of left-right political orientations in 20 countries. *Political Psychology*, *32*(4), 537–561. https://doi.org/10.1111/j.1467-9221.2011.00828.x

Popper, K. (1934/2002). *The logic of scientific discovery*. London: Routledge.

Porto, M. P. (2007). Frame diversity and citizen competence: Towards a critical approach to news quality. *Critical Studies in Media Communication*, *24*(4), 303–321. https://doi.org/10.1080/07393180701560864

Potter, W. J. (2011). Conceptualizing mass media effect. *Journal of Communication*, *61*(5), 896–915. https://doi.org/10.1111/j.1460-2466.2011.01586.x

Powell, T. E., Boomgaarden, H. G., Swert, K. de, & de Vreese, C. H. (2015). A clearer picture: The contribution of visuals and text to framing effects. *Journal of Communication*, *65*(6), 997–1017. https://doi.org/10.1111/jcom.12184

Price, V., & Tewksbury, D. (1997). News values and public opinion: A theoretical account of media priming and framing. In G. A. Barrett & F. J. Boster (Eds.), *Progress in communication sciences: Advances in persuasion* (pp. 173–212). Greenwich, CT: Ablex.

Price, V., Tewksbury, D., & Powers, E. (1997). Switching trains of thought: The impact of news frames on readers' cognitive responses. *Communication Research*, *24*(5), 481–506. https://doi.org/10.1177/009365097024005002

Prior, M. (2007). *Post-broadcast democracy: How media choice increases inequality in political involvement and polarizes elections*. Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9781139878425

Quiring, O., & Weber, M. (2012). Between usefulness and legitimacy: Media coverage of governmental intervention during the financial crisis and selected effects. *The International Journal of Press/Politics*, *17*(3), 294–315. https://doi.org/10.1177/1940161212442957

Reese, S. D. (2001). Framing public life: A bridging model for media research. In S. D. Reese, O. H. Gandy JR., & A. E. Grant (Eds.), *Framing public life: Perspectives on media and our understanding of the social world* (pp. 7–31). Mahwah: Lawrence Erlbaum.

Reese, S. D. (2007). The framing project: A bridging model for media research revisited. *Journal of Communication*, *57*(1), 148–154. https://doi.org/10.1111/j.1460-2466.2006.00334.x

Reinard, J. C. (2006). *Communication research statistics*. London: Sage.

Respondi AG (2018). Our current panelbook. Retrieved from https://www.respondi.com/EN/our-work#Download

Roets, A., & van Hiel, A. (2011). Item selection and validation of a brief, 15-item version of the Need for Closure Scale. *Personality and Individual Differences*, *50*(1), 90–94. https://doi.org/10.1016/j.paid.2010.09.004

Rokeach, M. (1973). *The nature of human values*. New York: The Free Press.

Rokeach, M., & Ball-Rokeach, S. J. (1989). Stability and change in American value priorities 1968–1981. *American Psychologist*, *44*(5), 775–784. https://doi.org/10.1037/0003-066X.44.5.775

Rosa, H. (2003). Social acceleration: Ethical and political consequences of a desynchronized high-speed society. *Constellations*, *10*(1), 3–33. https://doi.org/10.1111/1467-8675.00309

Rosenthal, R. (2004). Investigator effects. In M. S. Lewis-Beck, A. Bryman, & T. F. Liao (Eds.), *The Sage encyclopedia of social science research methods* (pp. 527–528). Thousand Oaks: Sage. https://doi.org/10.4135/9781412950589.n458

Roskos-Ewoldsen, D. R., Klinger, M. R., & Roskos-Ewoldsen, B. R. (2007). Media priming: A meta-analysis. In R. W. Preiss, B. M. Gayle, N. Burell, M. Allen, & J. Bryant (Eds.), *Mass media effects research* (pp. 53–80). Mahwah, NJ: Erlbaum.

Rosseel, Y. (2012). lavaan: An R package for structural equation modeling. *Journal of Statistical Software*, *48*(2), 1–36. https://doi.org/10.18637/jss.v048.i02

Rucker, D. D., Petty, R. E., & Briñol, P. (2008). What's in a frame anyway? A meta-cognitive analysis of the impact of one versus two sided message framing on attitude certainty. *Journal of Consumer Psychology*, *18*(2), 137–149. https://doi.org/10.1016/j.jcps.2008.01.008

Scharkow, M., & Bachl, M. (2017). How measurement error in content analysis and self-reported media use leads to minimal media effect findings in linkage analyses: A simulation study. *Political Communication*, *34*(3), 323–343. https://doi.org/10.1080/10584609.2016.1235640

Schemer, C., Wirth, W., & Matthes, J. (2012). Value resonance and value framing effects on voting intentions in direct-democratic campaigns. *American Behavioral Scientist*, *56*(3), 334–352. https://doi.org/10.1177/0002764211426329

Scheufele, B. T. (2004). Framing-effects approach: A theoretical and methodological critique. *Communications*, *29*, 401–428. https://doi.org/10.1515/comm.2004.29.4.401

Scheufele, B. T. (2010). Verknüpfen und Urteilen: Ein Experiment zur Wirkung medialer Value-Frames [Connecting and judging: An experiment on the effects of media value frames]. *Medien & Kommunikationswissenschaft*, *58*(1), 26–45. https://doi.org/10.5771/1615-634x-2010-1-26

Scheufele, B. T., & Engelmann, I. (2013). Die publizistische Vermittlung von Wertehorizonten der Parteien. Normatives Modell und empirische Befunde zum Value-Framing und News Bias der Qualitäts- und Boulevardpresse bei vier Bundestagswahlen [The journalistic mediation of value orientations of parties: A normative model and empirical findings on the value framing and news bias of quality and tabloid media in four general elections]. *Medien & Kommunikationswissenschaft*, *61*(4), 532–550. https://doi.org/10.5771/1615-634x-2013-4-532

Scheufele, B. T., & Gasteiger, C. (2007). Berichterstattung, Emotionen und politische Legitimierung: Eine experimentelle Untersuchung zum Einfluss der Politikberichterstattung auf die Legitimierung politischer Entscheidungen am Beispiel von Bundeswehreinsätzen [Media coverage, emotions, and political legitimization: An experimental study on the influence of political media coverage on the legitimization of political decision by the example of military operations]. *Medien & Kommunikationswissenschaft*, *55*(4), 534–554. https://doi.org/10.5771/1615-634x-2007-4-534

Scheufele, B. T., Kordes, C., Meyer, H., Teutsch, D., Tretter, K., & Schieb, C. (2012). Garant oder Gefahr: Ein Medienwirkungsexperiment zur Instrumentalität des Value-Framing [Guarantor or threat: A media effects experiment on the instrumentality of value framing]. *Medien & Kommunikationswissenschaft*, *60*(3), 432–451. https://doi.org/10.5771/1615-634x-2012-3-432

Scheufele, B. T., & Scheufele, D. A. (2010). Of spreading activation, applicability, and schemas. In P. D'Angelo & J. A. Kuypers (Eds.), *Doing news framing analysis: Empirical and theoretical perspectives* (pp. 110–134). New York: Routledge.

Scheufele, D. A. (1999). Framing as a theory of media effects. *Journal of Communication*, *49*(1), 103–122. https://doi.org/10.1093/joc/49.1.103

Scheufele, D. A. (2000). Agenda-setting, priming, and framing revisited: Another look at cognitive effects of political communication. *Mass Communication and Society*, *3*(2-3), 297–316. https://doi.org/10.1207/S15327825MCS0323_07

Scheufele, D. A., & Iyengar, S. (2017). The state of framing research: A call for new directions. In K. Kenski & K. Hall Jamieson (Eds.), *The Oxford handbook of political communication* (pp. 619–632). Oxford: Oxford University Press.

Scheufele, D. A., & Tewksbury, D. (2007). Framing, agenda setting, and priming: The evolution of three media effects models. *Journal of Communication*, *57*(1), 9–20. https://doi.org/10.1111/j.1460-2466.2006.00326.x

Schmidt, V. A. (2014). Speaking to the markets or to the people? A discursive institutionalist analysis of the EU's sovereign debt crisis. *The British Journal of Politics and International Relations*, *16*(1), 188–209. https://doi.org/10.1111/1467-856X.12023

Schoon, I., Cheng, H., Gale, C. R., Batty, G. D., & Deary, I. J. (2010). Social status, cognitive ability, and educational attainment as predictors of liberal social attitudes and political trust. *Intelligence*, *38*(1), 144–150. https://doi.org/10.1016/j.intell.2009.09.005

Schuck, A. R. T., & de Vreese, C. H. (2006). Between risk and opportunity: News framing and its effects on public support for EU enlargement. *European Journal of Communication*, *21*(1), 5–32. https://doi.org/10.1177/0267323106060987

Schuck, A. R. T., & Feinholdt, A. (2015). News framing effects and emotions. In R. A. Scott & S. M. Kosslyn (Eds.), *Emerging trends in the social and behavioral sciences: An interdisciplinary, searchable, and linkable resource* (Vol. 28, pp. 1–15). Hoboken, NJ: Wiley. https://doi.org/10.1002/9781118900772.etrds0241

Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 25, pp. 1–65). San Diego: Academic Press. https://doi.org/10.1016/S0065-2601(08)60281-6

Schwartz, S. H. (2012). An overview of the Schwartz theory of basic values. *Online Readings in Psychology and Culture*, *2*(1), 1–20. https://doi.org/10.9707/2307-0919.1116

Schwartz, S. H., Caprara, G. V., & Vecchione, M. (2010). Basic personal values, core political values, and voting: A longitudinal analysis. *Political Psychology*, *31*(3), 421–452. https://doi.org/10.1111/j.1467-9221.2010.00764.x

Schwartz, S. H., Caprara, G. V., Vecchione, M., Bain, P., Bianchi, G., Caprara, M. G., . . . Zaleski, Z. (2014). Basic personal values underlie and give coherence to political values: A cross national study in 15 countries. *Political Behavior*, *36*(4), 899–930. https://doi.org/10.1007/s11109-013-9255-z

Schwerzmann, J. (2018, September 24). Neue Dimension in der teuren Krebsmedizin [New dimension in expensive cancer medicine]. *Swiss Radio and Television (SRG)*. Retrieved from https://www.srf.ch/sendungen/puls/neue-dimension-in-der-teuren-krebsmedizin

Semetko, H. A., & Valkenburg, P. M. (2000). Framing European politics: A content analysis of press and television news. *Journal of Communication*, *50*(2), 93–109. https://doi.org/10.1111/j.1460-2466.2000.tb02843.x

Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Boston: Houghton Mifflin.

Shah, D. V., Domke, D., & Wackman, D. B. (1996). "To thine own self be true": Values, framing, and voter decision-making strategies. *Communication Research*, *23*(5), 509–560. https://doi.org/10.1177/009365096023005001

Shah, D. V., Kwak, N., Schmierbach, M., & Zubric, J. (2004). The interplay of news frames on cognitive complexity. *Human Communication Research*, *30*(1), 102–120. https://doi.org/10.1093/hcr/30.1.102

Sheafer, T., & Gabay, I. (2009). Mediated public diplomacy: A strategic contest over international agenda building and frame building. *Political Communication*, *26*(4), 447–467. https://doi.org/10.1080/10584600903297240

Shen, F. (2004a). Chronic accessibility and individual cognitions: Examining the effects of message frames in political advertisements. *Journal of Communication*, *54*(1), 123–137. https://doi.org/10.1111/j.1460-2466.2004.tb02617.x

Shen, F. (2004b). Effects of news frames and schemas on individuals' issue interpretations and attitudes. *Journalism & Mass Communication Quarterly*, *81*(2), 400–416. https://doi.org/10.1177/107769900408100211

Shen, F., & Edwards, H. (2005). Economic individualism, humanitarianism, and welfare reform: A value-based account of framing effects. *Journal of Communication*, *55*(4), 795–809. https://doi.org/10.1111/j.1460-2466.2005.tb03023.x

Sigall, H., & Mills, J. (1998). Measures of independent variables and mediators are useful in social psychology experiments: But are they necessary? *Personality and Social Psychology Review*, *2*(3), 218–226. https://doi.org/10.1207/s15327957pspr0203_5

Silvia, P. J. (2006). Reactance and the dynamics of disagreement: Multiple paths from threatened freedom to resistance to persuasion. *European Journal of Social Psychology*, *36*(5), 673–685. https://doi.org/10.1002/ejsp.309

Slothuus, R. (2008). More than weighting cognitive importance: A dual-process model of issue framing effects. *Political Psychology*, *29*(1), 1–28. https://doi.org/10.1111/j.1467-9221.2007.00610.x

Slothuus, R., & de Vreese, C. H. (2010). Political parties, motivated reasoning, and issue framing effects. *The Journal of Politics*, *72*(3), 630–645. https://doi.org/10.1017/S002238161000006X

Sniderman, P. M., & Theriault, S. M. (2004). The structure of political argument and the logic of issue framing. In W. E. Saris & P. M. Sniderman (Eds.), *Studies in public opinion: Attitudes, nonattitudes, measurement error, and change* (pp. 133–165). Princeton: Princeton University Press.

Snow, D. A., & Benford, R. D. (1992). Master frames and cycles of protest. In A. D. Morris & C. McClurg Mueller (Eds.), *Frontiers in social movement theory* (pp. 133–155). New Haven, London: Yale University Press.

SP Schweiz (2018). 10 Prozent des Haushaltseinkommens für Krankenkassenprämien sind genug [10 % of household income is enough for health insurance fees]. Retrieved from https://www.sp-ps.ch/de/publikationen/medienmitteilungen/10-prozent-des-haushaltseinkommens-fur-krankenkassenpramien-sind

State Secretariat for Economic Affairs SECO (2018). Swiss economy booming, global economic risks increasing. Retrieved from https://www.seco.admin.ch/seco/en/home/seco/nsb-news.msg-id-72228.html

Steenbergen, M. R. (1996). Compassion and American public opinion: An analysis of the NES humanitarianism scale. Retrieved from https://pdfs.semanticscholar.org/54ad/fa4a51cbe8dccb8314c8ffeee79237e8d854.pdf

Strömbäck, J. (2005). In search of a standard: Four models of democracy and their normative implications for journalism. *Journalism Studies*, *6*(3), 331–345. https://doi.org/10.1080/14616700500131950

Stroud, N. J. (2010). Polarization and partisan selective exposure. *Journal of Communication*, *60*(3), 556–576. https://doi.org/10.1111/j.1460-2466.2010.01497.x

Swiss Agency for Therapeutic Products (2018). Authorisations of human medicines. Retrieved from https://www.swissmedic.ch/swissmedic/en/home/humanarzneimittel/authorisations.html

Swiss Federal Health Office (2018). *Statistik der obligatorischen Krankenversicherung 2016 [Statsitic of the obligatory health insurance in 2016]*. Retrieved from Swiss Federal Health Office website: https://www.bag.admin.ch/dam/bag/de/dokumente/kuv-aufsicht/stat/publications-aos/STAT%20AM%202016%20pdf.pdf.download.pdf/C_STAT%202016%20full_v2%20pp%20d%20180720.pdf

Swiss Federal Statistical Office (2016). *Schweizerischer Krebsbericht 2015 [Swiss cancer report 2015]*. Retrieved from Swiss Federal Statistical Office website: https://www.bfs.admin.ch/bfsstatic/dam/assets/350148/master

Swiss Federal Statistical Office (2017a). Detaillierte Haushaltsausgaben sämtlicher Haushalte nach Jahr [Detailed spending of all household by year]. Retrieved from https://www.bfs.admin.ch/bfs/de/home/statistiken/wirtschaftliche-soziale-situation-bevoelkerung/einkommen-verbrauch-vermoegen/haushaltsbudget/haushaltsausgaben.assetdetail.3865772.html

Swiss Federal Statistical Office (2017b). Entwicklung der Gesundheitsausgaben [Development of health expenditures]. Retrieved from

https://www.bfs.admin.ch/bfs/de/home/statistiken/kataloge-datenbanken/grafiken.assetdetail.4022099.html

Swiss Federal Statistical Office (2017c). Online-Nutzung der Kommunikations- und Informationsdienste [Online usage of communication and information services]. Retrieved from https://www.bfs.admin.ch/bfs/de/home/statistiken/kultur-medien-informationsgesellschaft-sport/informationsgesellschaft/gesamtindikatoren/haushalte-bevoelkerung/kommunikation-information.assetdetail.3862043.html

Swiss Federal Statistical Office (2018a). Gross monthly wage (median) by the degree of employment, professional position and gender - Private and public sectors combined [T18]. Retrieved from https://www.bfs.admin.ch/bfs/en/home/statistics/catalogues-databases/tables.assetdetail.5146020.html

Swiss Federal Statistical Office (2018b). Maturitätsquote - Daten der Grafiken [Proportion of high school graduates]. Retrieved from https://www.bfs.admin.ch/bfs/de/home/statistiken/bildung-wissenschaft/bildungsindikatoren/indikatoren/maturitaetsquote.assetdetail.6766415.html

Swiss Federal Statistical Office (2018c). Permanent resident population by age, category of citizenship, and sex. Retrieved from https://www.bfs.admin.ch/bfs/en/home/statistics/population/effectif-change.assetdetail.6046307.html

Swiss Federal Statistical Office (2018d). Ständige Wohnbevölkerung nach Hauptsprachen und Sprachregion [Permanent residential population by language and language region]. Retrieved from https://www.bfs.admin.ch/bfs/de/home/statistiken/bevoelkerung/sprachen-religionen/sprachen.assetdetail.4542303.html

Taber, C. S., Cann, D., & Kucsova, S. (2009). The motivated processing of political arguments. *Political Behavior*, *31*(2), 137–155. https://doi.org/10.1007/s11109-008-9075-8

Taber, C. S., & Lodge, M. (2006). Motivated skepticism in the evaluation of political beliefs. *American Journal of Political Science*, *50*(3), 755–769. https://doi.org/10.1111/j.1540-5907.2006.00214.x

Tang, M., & Huhe, N. (2014). Alternative framing: The effect of the Internet on political support in authoritarian China. *International Political Science Review*, *35*(5), 559–576. https://doi.org/10.1177/0192512113501971

Tankard, J. W., JR. (2001). The empirical approach to the study of media framing. In S. D. Reese, O. H. Gandy JR., & A. E. Grant (Eds.), *Framing public life: Perspectives on media and our understanding of the social world* (pp. 95–105). Mahwah: Lawrence Erlbaum. https://doi.org/10.4324/9781410605689-12

Tetlock, P. E. (1986). A value pluralism model of ideological reasoning. *Journal of Personality and Social Psychology*, *50*(4), 819–827. https://doi.org/10.1037/0022-3514.50.4.819

Tewksbury, D., Jones, J., Peske, M. W., Raymond, A., & Vig, W. (2000). The interaction of news and advocate frames: Manipulating audience perceptions of a local public policy issue. *Journalism & Mass Communication Quarterly*, *77*(4), 804–829. https://doi.org/10.1177/107769900007700406

Tormala, Z. L., Clarkson, J. J., & Petty, R. E. (2006). Resisting persuasion by the skin of one's teeth: The hidden success of resisted persuasive messages. *Journal of Personality and Social Psychology*, *91*(3), 423–435. https://doi.org/10.1037/0022-3514.91.3.423

Tormala, Z. L., & Petty, R. E. (2002). What doesn't kill me makes me stronger: The effects of resisting persuasion on attitude certainty. *Journal of Personality and Social Psychology*, *83*(6), 1298–1313. https://doi.org/10.1037/0022-3514.83.6.1298

Trepte, S., & Wirth, W. (2004). Externe versus interne Validität in kommunikationswissenschaftlichen Experimenten [Internal and external validity of experiments in communication research]. In W. Wirth, E. Lauf, & A. Fahr (Eds.), *Forschungslogik und -design in der empirischen Kommunikationswissenschaft. Band 1: Einführung, Problematisierung und Aspekte der Methodenlogik aus kommunikationswissenschaftlicher Perspektive [Research logic and design in empirical communication science. Volume 1: Introduction, problematization, and aspect of the logic of methodology from the perspective of communication science]* (pp. 60–87). Köln: Herbert von Halem.

Tversky, A., & Kahneman, D. (1973). Availability: A heuristic for judging frequency and probability. *Cognitive Psychology*, *5*(2), 207–232. https://doi.org/10.1016/0010-0285(73)90033-9

Tversky, A., & Kahneman, D. (1981). The framing of decisions and the psychology of choice. *Science*, *211*(4481), 453–458. https://doi.org/10.1126/science.7455683

United Nations (1948). Universal declaration of human rights: UDHR. Retrieved from https://www.un.org/en/universal-declaration-human-rights/

Valentino, N. A., Beckmann, M. N., & Buhr, T. A. (2001). A spiral of cynicism for some: The contingent effects of campaign news frames on participation and confidence in government. *Political Communication*, *18*(4), 347–367. https://doi.org/10.1080/10584600152647083

Valeriani, A., & Vaccari, C. (2016). Accidental exposure to politics on social media as online participation equalizer in Germany, Italy, and the United Kingdom. *New Media & Society*, *18*(9), 1857–1874. https://doi.org/10.1177/1461444815616223

Van Dijck, J., & Poell, T. (2013). Understanding social media logic. *Media and Communication*, *1*(1), 2–14. https://doi.org/10.12924/mac2013.01010002

Vecchione, M., Schwartz, S. H., Alessandri, G., Döring, A. K., Castellani, V., & Caprara, M. G. (2016). Stability and change of basic personal values in early adulthood:

An 8-year longitudinal study. *Journal of Research in Personality*, *63*, 111–122. https://doi.org/10.1016/j.jrp.2016.06.002

Verplanken, B., & Holland, R. W. (2002). Motivated decision making: Effects of activation and self-centrality of values on choices and behavior. *Journal of Personality and Social Psychology*, *82*(3), 434–447. https://doi.org/10.1037//0022-3514.82.3.434

Vliegenthart, R. (2012). Framing in mass communication research: An overview and assessment. *Sociology Compass*, *6*(12), 937–948. https://doi.org/10.1111/soc4.12003

Weber, S. J., & Cook, T. D. (1972). Subject effects in laboratory research: An examination of subject roles, demand characteristics, and valid inference. *Psychological Bulletin*, *77*(4), 273–295. https://doi.org/10.1037/h0032351

Webster, D. M., & Kruglanski, A. W. (1994). Individual differences in need for cognitive closure. *Journal of Personality and Social Psychology*, *67*(6), 1049–1062. https://doi.org/10.1037//0022-3514.67.6.1049

West, S. G., Taylor, A. B., & Wu, W. (2012). Model fit and model selection in structural equation modeling. In R. H. Hoyle (Ed.), *Handbook of structural equation modeling*. New York: Guilford Press.

Wettstein, M. (2012). Frame adoption in referendum campaigns: The effect of news coverage on the public salience of issue interpretations. *American Behavioral Scientist*, *56*(3), 318–333. https://doi.org/10.1177/0002764211426328

Wilson, T. D., Houston, C. E., Etling, K. M., & Brekke, N. (1996). A new look at anchoring effects: Basic anchoring and its antecedents. *Journal of Experimental Psychology*, *125*(4), 387–402. https://doi.org/10.1037/0096-3445.125.4.387

Wise, P. (2016, November 20). Wie mit überteuerten Medikamenten Geschäfte mit Krebskranken gemacht werden [Bargaining with cancer patients with overpriced medicaments]. *NZZ Am Sonntag*. Retrieved from https://nzzas.nzz.ch/wissen/krebs-gesundsheitskosten-immuntherapien-ueberteuerte-medikamente-geschaefte-ld.151912?reduced=true

Woodtli, N. (2017, February 28). Das Geschäft mit Krebs: Handel mit der letzten Hoffnung [The business with cancer: Trade with the last hope]. *Swiss Radio and Television (SRG)*. Retrieved from https://www.srf.ch/sendungen/kassensturz-espresso/das-geschaeft-mit-krebs-handel-mit-der-letzten-hoffnung

Zajonc, R. B. (1968). Attitudinal effects of mere exposure. *Journal of Personality and Social Psychology*, *9*(2), 1–27. https://doi.org/10.1037/h0025848

Zhao, X., Strasser, A., Cappella, J. N., Lerman, C., & Fishbein, M. (2011). A measure of perceived argument strength: Reliability and validity. *Communication Methods and Measures*, *5*(1), 48–75. https://doi.org/10.1080/19312458.2010.547822

Ziegler, R., & Diehl, M. (2003). Is politician A or politician B more persuasive? Recipients' source preference and the direction of biased message processing. *European Journal of Social Psychology*, *33*(5), 623–637. https://doi.org/10.1002/ejsp.174

Ziegler, R., Dobre, B., & Diehl, M. (2007). Does matching versus mismatching message content to attitude functions lead to biased processing? The role of message ambiguity. *Basic and Applied Social Psychology*, *29*(3), 269–278. https://doi.org/10.1080/01973530701503366

Ziegler, R., Schwichow, A. von, & Diehl, M. (2005). Matching the message source to attitude functions: Implications for biased processing. *Journal of Experimental Social Psychology*, *41*(6), 645–653. https://doi.org/10.1016/j.jesp.2004.12.002

Zilli Ramírez, C., & Verkuyten, M. (2011). Values, media framing, and political tolerance for extremist groups. *Journal of Applied Social Psychology*, *41*(7), 1583–1602. https://doi.org/10.1111/j.1559-1816.2011.00775.x